CORNWALL and the POST-INDUSTRIAL SEAWAY LANDSCAPE

Localized Agency After Absolute Authority

by

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AUTHORS DECLARATION

I hereby declare that I am the sole author of this thesis.
This is a true copy of the thesis, including any required revisions, as accepted by my examiners.
I understand that my thesis may be made electronically available to the public.

ABSTRACT

In the 1950s the Ontario city of Cornwall was the site of a massive industrial infrastructural project, the St. Lawrence Seaway.

The Seaway Project was a modernist dream intended to spur development of an industrial utopia. Following the completion of the Seaway Project, global economical shifts precluded the aspirations for an industrialized Seaway and the planning of the modernist industrial utopia was never realized. Today, Seaway traffic continues, but without any benefit to the local communities it promised to improve. These waterfront communities no longer have an economic or architectural relationship to the St. Lawrence River. The Seaway Project has muted the waterfront identities of these towns and cities and many former industrial sites along the waterfront are now either abandoned or contaminated. Today, many of the towns and cities along the St. Lawrence River border are economically depressed and are searching to find ways of reinventing themselves.

This thesis proposes a new design vision for the Cornwall Canal Lands, and it is meant to be applicable to all the communities along the St. Lawrence River border. The approach is not fixated on singular outcomes but rather sees urbanism as a process dependent on time and human agency. This proposal utilizes three very specific frameworks in expanded roles; the existing infrastructure as a network, the post-industrial requirement of environmental regeneration, and interpersonal interactions. Creating the armature for moments of interpersonal interactions is paramount in the new design vision. The renewed emphasis on the waterfront community creates the opportunity to build and strengthen community. The three frameworks, designed over four phases of duration, form a post-industrial design vision; based on local citizen based involvement, sustainable form of city-making and local experimentation that integrates existing urban morphology.

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DEDICATION

This thesis is dedicated to Joy and Roger Rivier, my parents, for the love and support they have given me throughout my life, and for always believing in me.

To my beautiful wife Jacqueline, thank you for all guidance and advice throughout this voyage.

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'Shown is the site of the new temporary port of entry for the Canada Border Services', The Standard-Freeholder. (Accessed December 5, 2013) http://storage.standard-freeholder.com/v1/dynamic_resize/sws_path/suns-prod-images/1297499958063_ORIGINAL.jpg?quality=80&size=650x&stmp=1386123210306.

Figure 140 Temporary Cornwall Point of Entry.
The Federal Bridge Corporation Limited, André Girard. (Accessed May 1, 2015) http://www.pontcornwallbridge.ca/eng/wp-content/uploads/2014/06/POE.jpg

Figure 141 Muhammad Tariq and Chuck Charlebois protest construction.
'Muhammad Tariq and Chuck Charlebois vehemently protest the storage tanks', Lois Ann Baker, The Standard Freeholder. (Accessed December 17th, 2013) http://storage.standard-freeholder.com/v1/dynamic_resize/sws_path/suns-prod-images/1297501267140_ORIGINAL.jpg?quality=80&size=650x&stmp=1387331877219.

Figure 142 Chemical Tank Construction, December 9th, 2013.
'Construction is going ahead on two calcium chloride tanks on the city's waterfront.' Seaway News. (Accessed December 9th, 2013) http://www.cornwallseawaynews.com/media/photos/unis/2013/12/05/2013-12-05-02-52-57-waterfront%20tanks.jpg.

1

INTRODUCTION

> *“There was once a society that believed the future would bring better living conditions to everyone. There were people, utopian thinkers, who thought about the big questions of the city. Today only a feeling remains, half desire, half melancholy, reminiscing of those architects who wanted to live in a better society and who had dreamed of better places. Such an era is now over. Here begins my work.”* [1]
>
> Raumlabor

Mill Towns

by David Francey (August 7, 1999)

Heard a voice call down from the lonesome north
Singing songs of work and worth
Hard edged stories from the hard rock towns
I can picture the Saturday nights
Tires squealing from the Main Street lights
Hear the creaking of the cables on the cage as it's
lowered down
Hard edge stories from the streets of the mining towns

[Chorus]
Don't follow me in boys
Don't follow me in boys
Don't follow me in boys
Don't follow me down

I was raised by the Seaway side
Staring out at the river wide
Rode my bike up the bridge, looked back
at the paper mill
Through the windows I'd try and see
What the future held for the likes of me
And I can hear the shift change siren still
In the Seaway City, by the stacks of the paper mill

[Chorus]
Don’t follow me in boys
Don’t follow me in boys
Don’t follow me in boys
Don’t follow me down

And the towns that rose with the mines and mills
Watch the future pass like they’re standing still
And the kids all leave, like the light when the sun
goes down
When you go back now and you walk the streets
There’s parking lots where buildings used to be
Night still falls but it doesn’t make a sound
Long shadows fall, on the streets of the cold mill towns

[Chorus]
Don’t follow me in boys
Don’t follow me in boys
Don’t follow me in boys
Don’t follow me down

Figure 1: The Watery Grave of Aultsville, Ontario.

Introduction

I grew up in the Seaway City, commonly known as Cornwall, Ontario. Every year I would spend the summer, and most weekends during the warm months, at my family's cottage on Lake St. Lawrence. I still remember when I was young and first discovered that the lake I would row and sail on was a product of a massive power dam in Cornwall. I spent literally weeks of my life on the waters of that lake. You could look over the side of the boat and see old sidewalks, foundations, and tree stumps, facing up at you from the watery cold depths of the lake. When I was a child I just thought that all bodies of water had similar conditions.

In the spring of 2014, I visited the Ontario Power Generation (OPG) Visitor Centre adjacent to the Moses-Saunders Power Dam in Cornwall. The Moses-Saunders Power Dam was the first bi-national hydroelectric generating station ever constructed, and was the pinnacle of the Seaway Project. Displayed prominently within the entry foyer, was a large framed letter on the wall. It was an official apology from the OPG to the Mohawks of Akwesasne for the numerous trespasses that were committed during the construction of the St. Lawrence Seaway & Power Project (SLS&PP). Another display detailed and recounted the displacement of 6,500 people who lived on lands that were to be inundated. This had taken place six decades ago.

It was here that I first came to the realization that the effects of the Seaway Project and its legacy had gone beyond a physical transformation of the landscape. It had produced an imprint on the civic landscape of the local communities. Unlike the physical changes to the landscape that can be tracked with maps and images, the change to the civic landscape is much more elusive.

In a statement of claim against OPG, a Mohawk elder contributed:

> *"There was a whole culture of a river, among our Mohawks there was a river culture, there was a river language, there were feelings, there were songs, there were stories and the Seaway just amputated that."*[2]

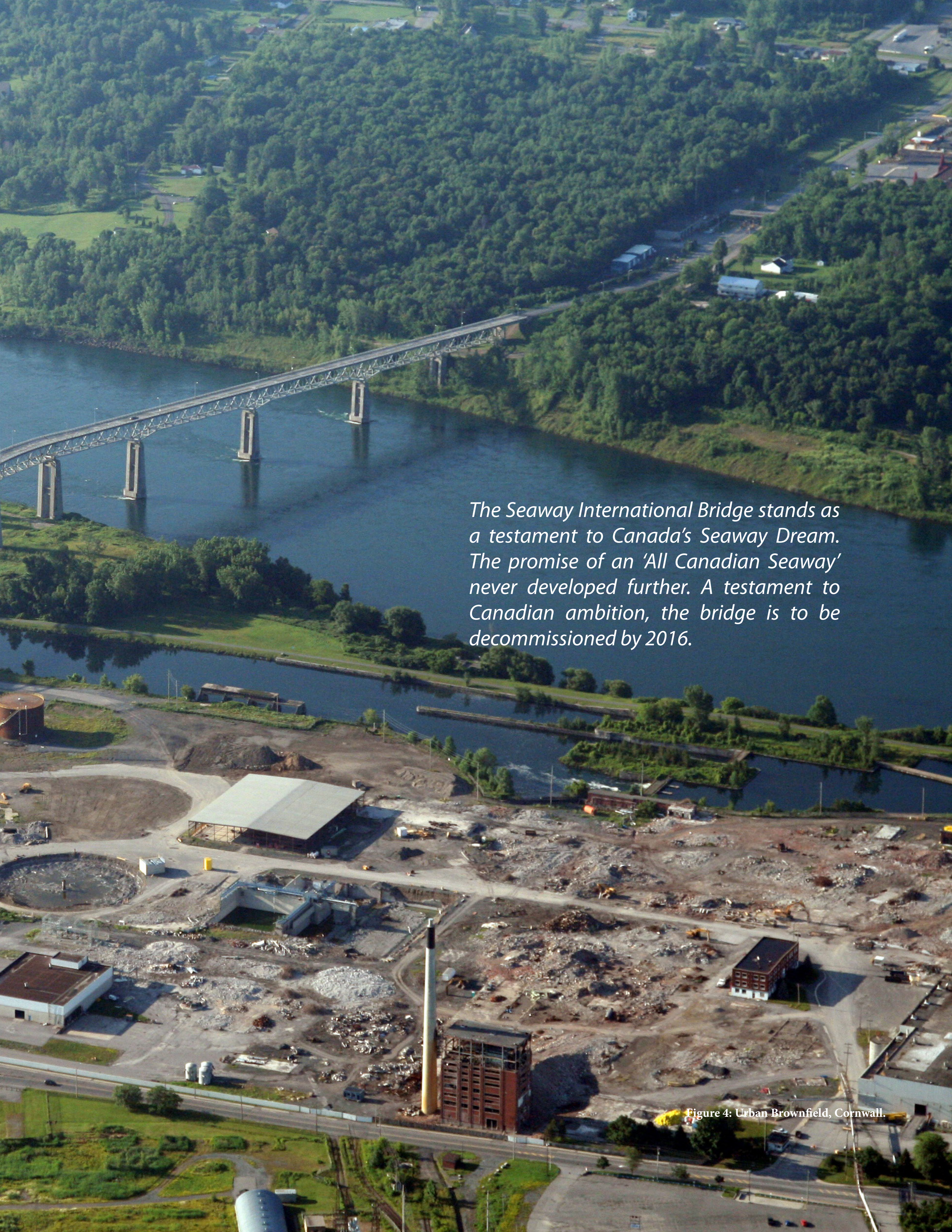
While the planners designed a new high water mark for the new Lake St. Lawrence, the high water mark for a culture and way of life along the St. Lawrence River had rapidly come to an end. The Seaway Project was a top down project, that was indifferent to the local condition. The power welded by the authority behind the project was so absolute that it has left a lasting impression on the region's civic landscape.

Cornwall began as a waterfront community. The Seaway Project produced a completely public waterfront in Cornwall, but another outcome was a civic disconnection from this natural artifact. Today the waterfront is underutilized and local citizen efforts to improve this condition are stifled.

Figure 2: Central Waterfront, Cornwall, Ontario.

Historically, Cornwall had been a mill and factory town. The street structure radiates out from these former waterfront industrial sites. The economic conditions following the Seaway Project saw historic waterfront industries shuttered.

Figure 3: Central East Waterfront, Cornwall, Ontario.



The Seaway International Bridge stands as a testament to Canada's Seaway Dream. The promise of an 'All Canadian Seaway' never developed further. A testament to Canadian ambition, the bridge is to be decommissioned by 2016.

Figure 4: Urban Brownfield, Cornwall.

The Seaway Project held the promise of a new industrial heartland along the St. Lawrence River. The Seaway City was created with abundant land intended for Seaway industries. These lands remained entirely dormant until the recent rise of the service industry.

Figure 5: Cornwall Industrial Park.

The Cornwall Canal was one of eight canals that connected the Great Lakes with the Atlantic Ocean. Constructed between 1834-1842 to overcome the Long Sault Rapids, it was superseded by the Seaway. Originally 18.5 kms in length, today only 4.5 kms remain.

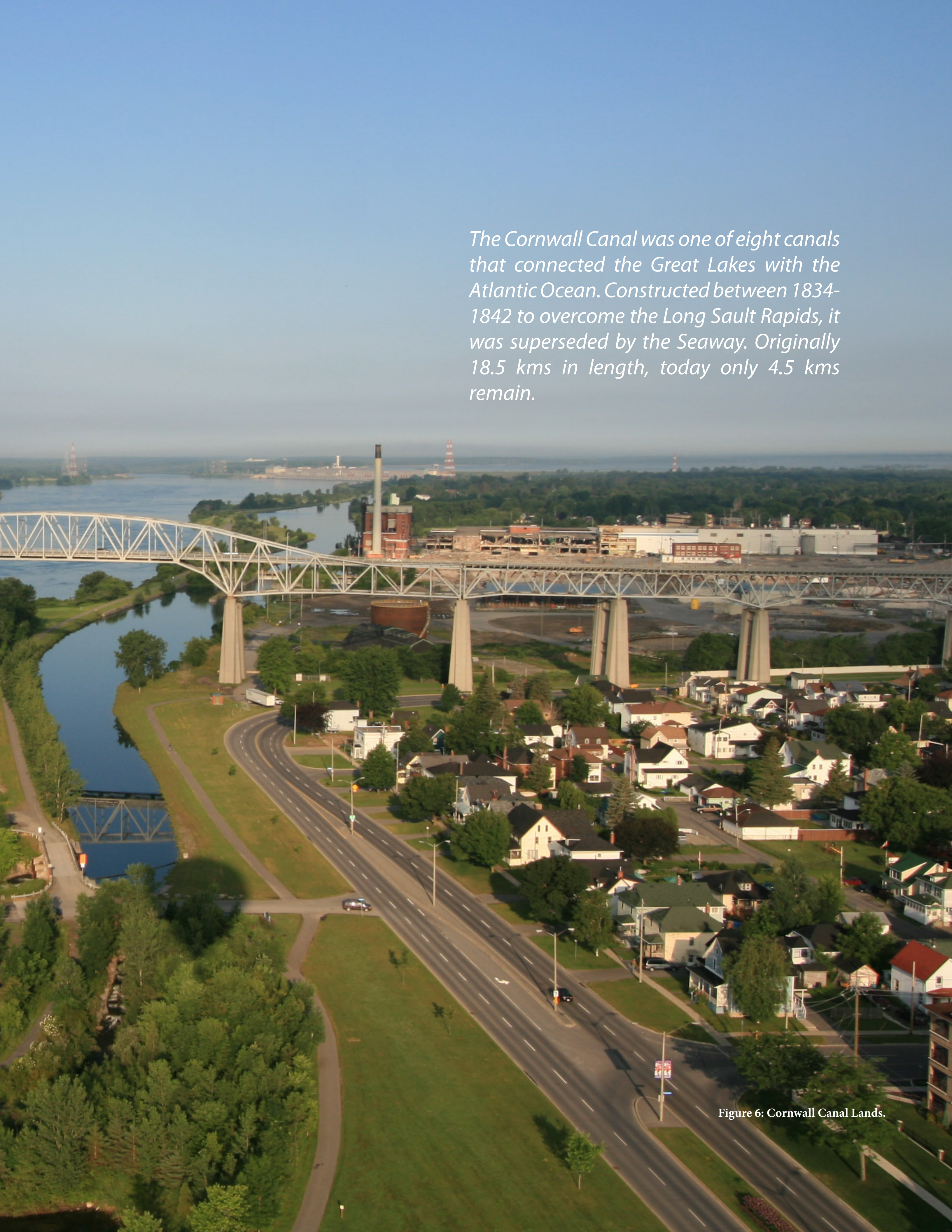


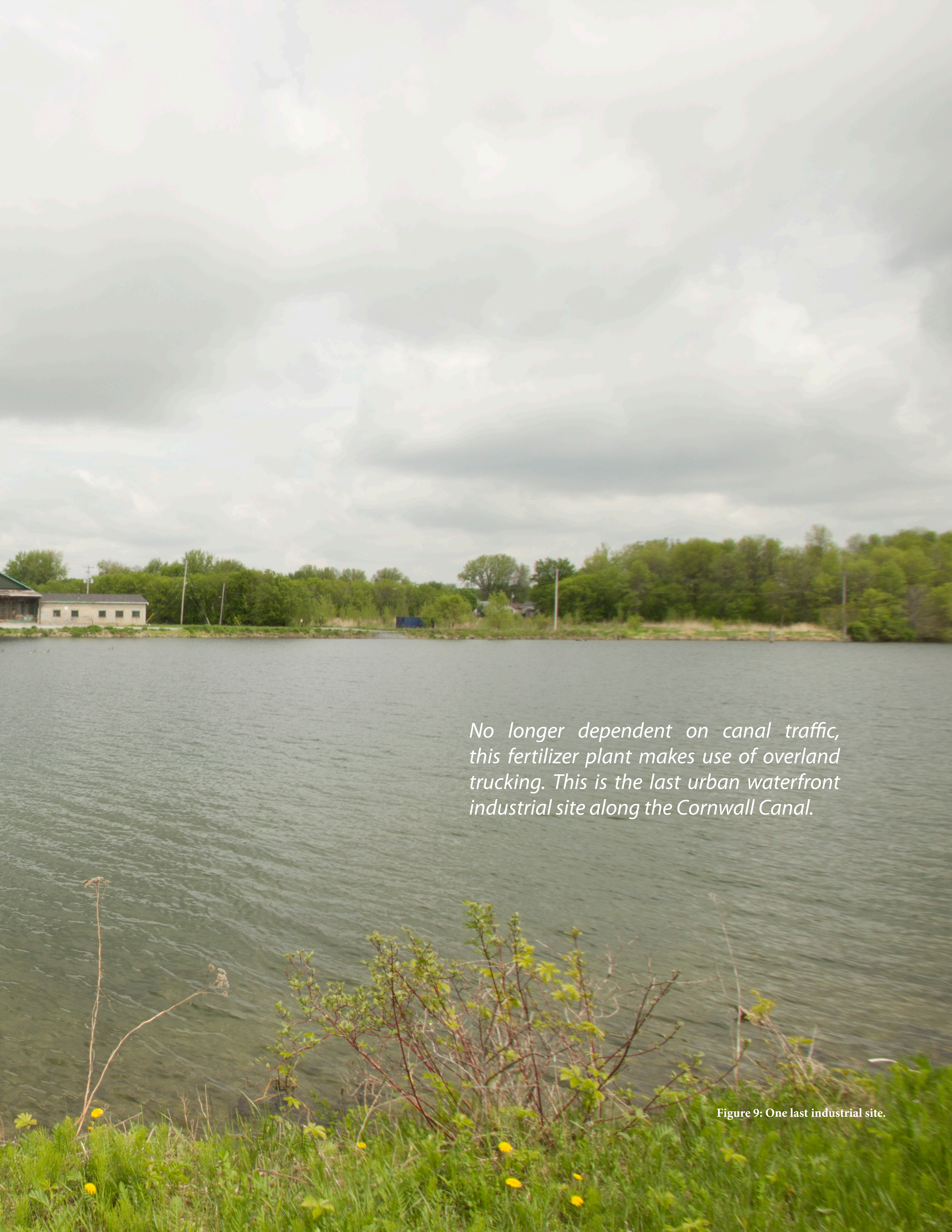
Figure 6: Cornwall Canal Lands.

Time has been hard on historical artifacts in Cornwall. The Seaway Project established a fetish for the new, and little attention has been paid to preserving Cornwall's historical artifacts.

Figure 7: Former Cornwall Canal drydock.

Once the place of great energy and activity, the Cornwall Canal now sits unused and decaying. It has been viewed as a physical barrier between the city and the river, resulting in portions being filled in during the 1970s.

Figure 8: Former Cornwall Canal lock.



No longer dependent on canal traffic, this fertilizer plant makes use of overland trucking. This is the last urban waterfront industrial site along the Cornwall Canal.

Figure 9: One last industrial site.

The Cornwall waterfront is a unique topographical landscape adjacent to the flat settlement site of the city. The change in grade provided unlimited hydrological energy for early industries.

Figure 10: The canal bank and river shore.

The Cornwall Canal has preserved the shoreline to the south of the canal from development. The beautiful Waterfront Recreational Trail follows the south side of the Cornwall Canal, but is under utilized.

Figure 11: The Waterfront Recreational Trail.

Exploring off the Waterfront Recreational Trail can be rewarding. This 7m cyclopean stone retainment wall is nearly two centuries old, and sits abandoned in this the forgotten landscape.

Figure 12: Cyclopean retainment wall.

The Cornwall Canal was built for large commercial shipping. Today it sits completely unused. The decommissioning of former industrial sites has created urban voids that penetrate into the city from the canal banks.

Figure 13: The view up the canal.

The site of the former Domtar Paper Mill is on the Cornwall Canal, close to the centre of city. The vast majority of the complex is gone, but the contamination from over a century of industrial production remains.

Figure 14: An urban brownfield.

Beyond the view of the Waterfront Recreational Trail are moments of unexpected discovery. This former canal locks control gate produces an urban waterfall and subsequent micro climate. It is hidden beyond a thicket of wild growth.

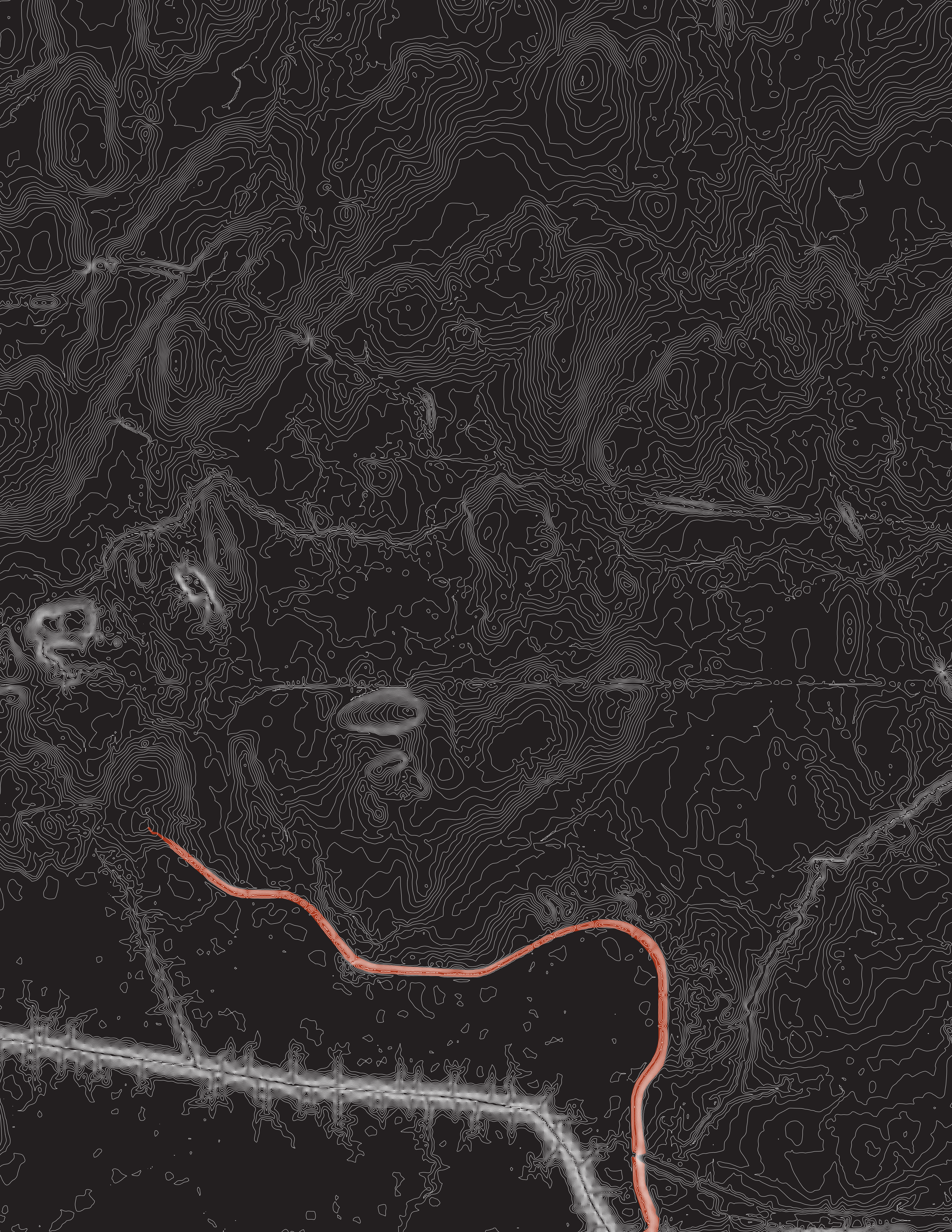
Figure 15: Control gate waterfall.

This canal lock is larger than an Olympic swimming pool, but is hidden from the Waterfront Recreational Trail by a large grove of spruce trees that have established themselves in the absence of human activity.

Figure 16: Former canal lock.

The Cornwall waterfront has been preserved from development, but is underutilized. The role of the public is missing in this public landscape. The post-industrial condition in Cornwall offers the opportunity to re-engage with this landscape and overcome the legacy of the Seaway Dream.

Figure 17: The public waterfront.



2

SETTING

A product of Canada's Golden Age[3], the SLS&PP was a project like no other before it in Canada's history. The Seaway Project captures the energy and initiative of the Canadian experience in the post-war period when Canada was reaching unprecedented levels of prosperity and international position. The project began in 1954, and was completed ahead of schedule in 1959. The realization of the SLS&PP saw destruction of the St. Lawrence River Valley and the establishment of the St. Lawrence Seaway Valley.

The Seaway Dream of the establishment of a new industrial heartland failed to materialize. As the Seaway approaches its sixth decade of operation, the Seaway Valley is now a post-industrial landscape that has outlived the designs of Canada's Golden Age and the dreams of the 1950s.

The St. Lawrence River is Canada's most important river. Snow melt and rainwater from the deepest inlands of North America flow and run over the continent, swelling streams and rivers, finally reaching one of the Great Lakes, the figurative and literal heartland of North America. For over two centuries, the Great Lakes and the St. Lawrence River have been a physical demarcation of the international border between Canada and the United States.

The history of the St. Lawrence River is one of raw power and beauty. The St. Lawrence River Valley was a landscape formed after the last ice age. It is a place that has been shaped by several centuries of European struggles for control, and has experienced two centuries of heavy development as one of Canada's oldest regions. Upriver from Montreal, river transport on the St. Lawrence River was obstructed by a series of formidable rapids. Settlers viewed the ancient river as a force to be conquered. Prior to industrialization the regional trade was in raw materials, and the rapids along the St. Lawrence River hampered transportation. Within several decades, the new settlers along the St. Lawrence River began to build canals along the river to ease river transport. The construction of these canal systems would mark the beginning of an engineered landscape along the river.

Soon it was realized that the inexhaustible power of the St. Lawrence River would create the ideal setting for mills and factory. During industrialization, sites along existing canals created ideal locations to harness hydrological energy. Matched with the ease of transportation afforded by the canals, the St. Lawrence River Valley quickly became an industrial centre by the end of the 19th century.

In Europe, it was recognized during the first decade of the 20th century that new technological advances threatened the existing way of life. It was the Italian Futurists that recognized that this new way of life, one of unprecedented speed and power, required a new art to reflect it. This summarily lead Futurist Architects to imagine organizing cities around this new technology and speed.

Within architecture, the rapid industrialization of urban centres was seen as a challenge for the historic city. Things had come into being over time, in an unorganized way. This led to unfavourable conditions, such as people living adjacent to dirty factories and infrastructure. At the beginning of the 20th century, French Architect Tony Garnier would attempt to design a solution. Garnier envisioned an utopian industrial city.[4]

A decade later, Garnier's unrealized plans for an industrial utopian city would heavily influence the early urban space planning strategy of the modernist movement. A principle of modernism, the strategy of spatial functionalism would see the core functions of the city separated from each other. The modernist architects were trying to solve the problems faced by the industrialized historic city. Their solution was separating core functions of the city. Industry separated from the residential, connected by parkways through open parkland for leisure.

Decades later and across the Atlantic, the industrial demand for raw material and transport during the Second World War illustrated the strategic need of expanded shipping along the St. Lawrence River. Following victory, and during the post-war economic boom, the Canadian experiment had its focus on a massive industrial infrastructure project known as the SLS&PP. The Seaway Project would harness the St. Lawrence River for a much needed hydroelectricity, and construct a deep water channel to form a conduit for ocean-going vessels to access the Great Lakes. Two hundred and forty square kilometres of land was flooded and 6,500 people were displaced.[5] This landscape would become the artificial Lake St. Lawrence.

The Seaway Project was designed with great effort and intentions. This was the opportunity to create a new design for a new region. Unlike previous hydroelectric projects, the SLS&PP would be situated directly adjacent to the industrial city of Cornwall. The Seaway Planners jumped on this mixture of urbanism, industry and infrastructure with grand plans. Visions of a new Canadian industrial heartland were discussed and plans that would rival the major industrial hubs of the era. The city of Cornwall would become transformed into 'The Seaway City'. By an act of the Ontario Municipal Board, Cornwall overnight increased in size by thirty-four times.[6] Entire villages and towns were slated for demolition and contemporary communities were being planned and designed. The scale and optimism of the Seaway Project were attracting world wide attention.

Members the MARS Group, the British delegation to CIAM, had emerged from the second world war expecting large commissions, but rebuilding Britain would be hampered due to post-war austerity measures. Wells Coates, a founding member of the MARS Group, was captivated by the opportunity offered by the Seaway Project. A decade and a half prior to the modernist triumph of expo'67, in 1952, Coates travelled to the St. Lawrence River Valley and offered a vision of an industrial city designed to modernist CIAM principles.[7]

The village of Iroquois was slated to be demolished, and was to be relocated. Coates seized on the opportunity, and got involved in the design and planning of the post-Seaway community. In the end, even in the official capacity as the architect hired by the local municipality, Coates' plans were no match for the absolute authority of the Seaway Project. Unrealized, the 'Iroquois New Town' designs offered the perspective of an idealized reality for the towns and cities along the Seaway where the dream occurred. An idealized reality where the Seaway dream was realized in the most progressive modernist planning principles. Today's situation is caught between this 1950s idealized vision, and the contemporary reality.

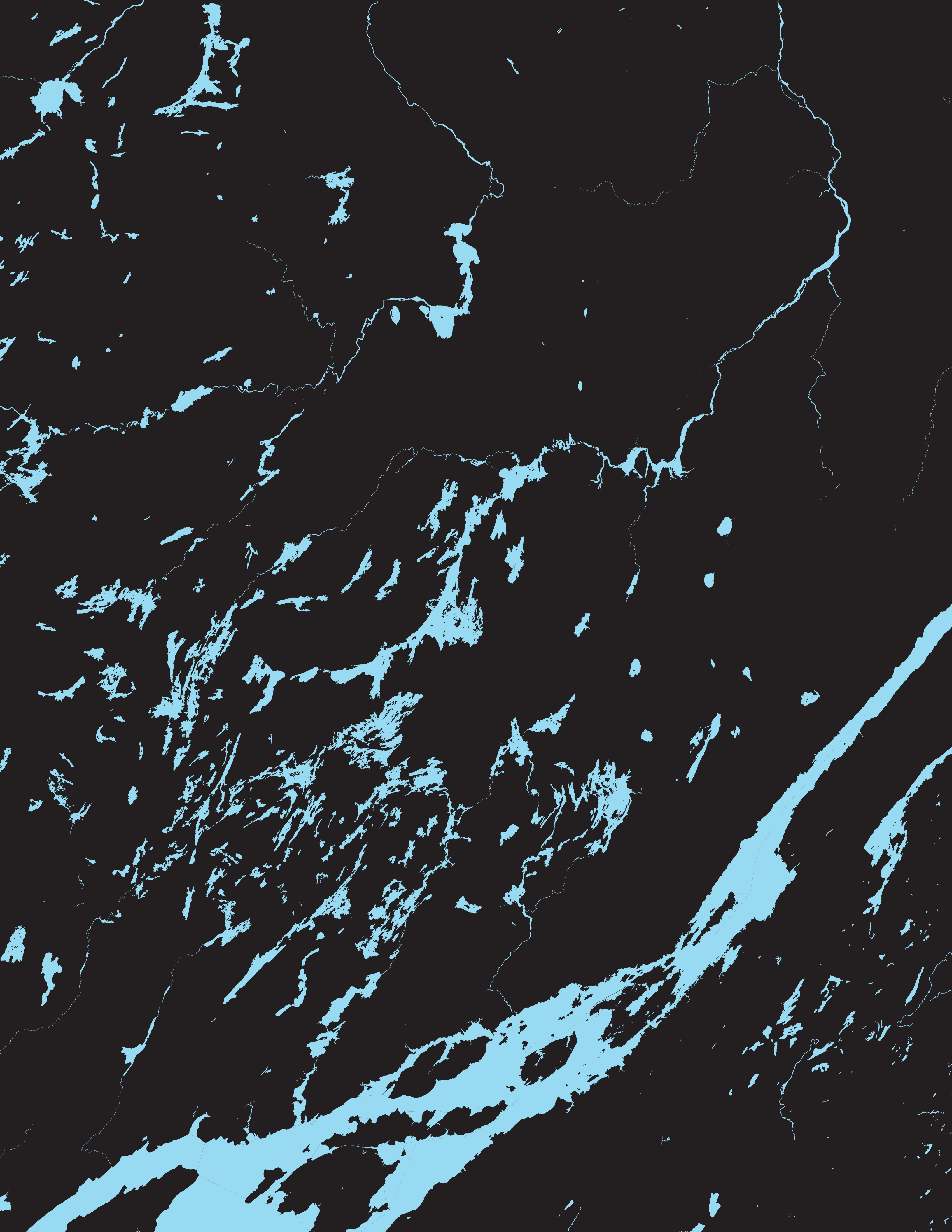
It has been six decades since the designs for the SLS&PP were committed to the landscape of the St. Lawrence River. Coates' designs for the 'Iroquois New Town' never got past the Hydroelectric Commission of Ontario, nor did the Seaway Valley ever develop into a new Canadian industrial heartland. In many ways the Seaway dream was over before it had began as a result of changing world economics. The modernist planning vision for the Seaway Valley, as illustrated by the 'Iroquois New Town' were never realized, but the massive industrial infrastructure of the SLS&PP was. The absolute authority wielded by the SLS&PP has produced muted communities. The civic role of citizens in these communities, in the context of civic self-determination, has been eroded and degraded by the Seaway Project.

Six decades have passed since the completion of the SLS&PP. Deindustrialization has almost completely erased any economic connection between the St. Lawrence Seaway and the towns and cities along its shoreline. What remains today is a massive piece of infrastructure and former industrial sites along the waterfront. Construction of Highway 401 has moved development in these communities away from the St. Lawrence River, and towards the highway. The towns and cities along the St. Lawrence Seaway no longer are connected to the St. Lawrence River, but will forever be connected by it. The infrastructure built along this linear landform has produced a series of towns and cities that are strung together through landscape and the built form. Civic engagement along this existing infrastructure holds the promise of rebuilding local agency, and the role of the local agent.

Figure 18: Lake St. Lawrence shore.


WARNING
Dam
Downstream
R. H. Saunders
Generating Station
In An emergency call (613) 932-3072
ONTARIOPOWER
GENERATION

Figure 19: Lake St. Lawrence above Cornwall.



St. Lawrence River Settlement & Development

"In the afternoon we shot down some rapids where the river boiled and bubbled strangely, and where the force and headlong violence was tremendous. At seven o'clock we reached Dickinson's Landing, whence travellers proceed for two or three hours by stage-coach; the navigation of the river being so dangerous and difficult in the interval, by rapids, that steamboats do not make the passage. The number and length of these portages over which the roads are bad and the travelling slow, render the way between the towns of Montreal and Kingston somewhat tedious."[8]

Charles Dickens, 1842.

Figure 20: The St. Lawrence River Valley / Kaniatarowanenneh, the big waterway.

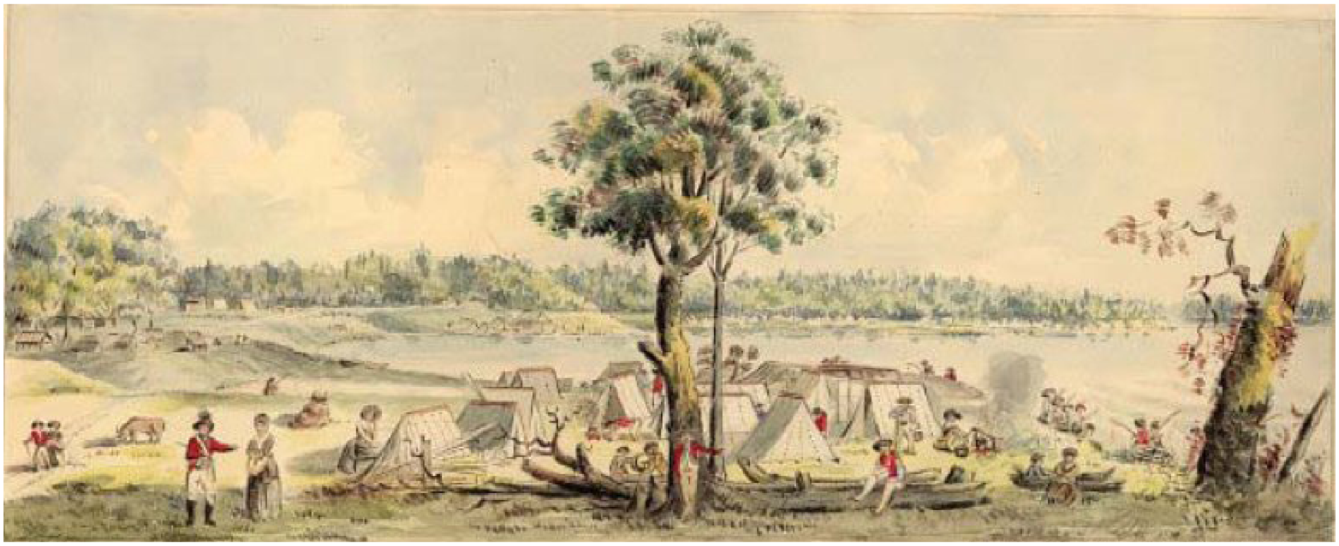


Figure 21: Loyalist founding of New Johnston, 1784.

Figure 22: The Long Sault Rapids, 1849.

The St. Lawrence River Valley Settlement

The shores and islands of the St. Lawrence River had been a site of settlement and inhabitation for Native Americans long before European discovery by Jacques Cartier in 1535.[9] The river provided for quick and easy transportation. The native people of the St. Lawrence River Valley named it accordingly, Kaniatarowanenneh, "big waterway".[10] European settlement and development along the St. Lawrence River from Montreal was hindered by a formidable series of rapids. It was the Mohawk community of St. Regis that first settled at the base of these rapids in 1753. Located along the south shore of the St. Lawrence River, the Mohawks of Akwesasne would develop a great reputation as boatmen along the waterway.

In 1783, the Treaty of Paris established an agreed upon border between British North America and the United States.[11] The new border followed the 45th parallel to the St. Lawrence River where it followed the centre of the river and the Great Lakes. This 174 km stretch of the St. Lawrence River serves as the physical demarcation of the border between Canada and the United States and is known as the St. Lawrence River international border segment (SLRIBS).

Following the American Revolutionary War, Sir John Johnson and the Mohawk Chief Joseph Brant came to an understanding that led to the founding of New Johnston (soon renamed Cornwall) across from St. Regis. New Johnston was settled in 1784, by disbanded members of the King's Royal Regiment of New York.[12]

The St. Lawrence River Valley Development

The early period of the Loyalist settlement were difficult. Within the first year, the land had been properly surveyed and the settlers were able to take up their plots. The shoreline of the St. Lawrence River was covered by an ancient White Pine forest, and it proved to be a formidable opponent in the struggle of clearing land. With limited means, the clearing of land had to be undertaken by hand.

The St. Lawrence River, since the end of the last ice age, had been a wild primordial force. The river's rapids had raged for millennia untameable. For the new Loyalist settlers of Cornwall, the river was another frontier to be tamed.

For these early settlements, the river furnished easy and inexpensive access to the larger economic market in Montreal. Raw materials could be carried to Montreal by the natural flow of the river. The St. Lawrence River was the only economic artery. For these early riverfront settlements, the Long Sault Rapids were seen as a physical barrier to economic progress.

Figure 23: Building the Cornwall Canal, 1830s.

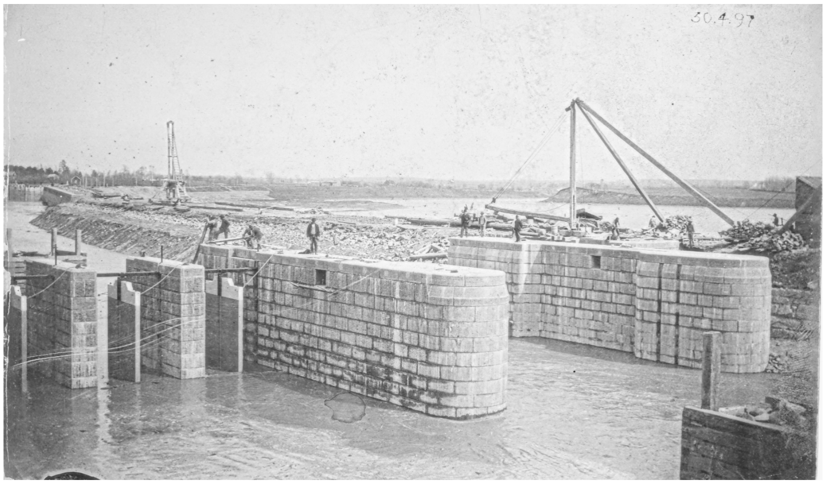


Figure 24: Lock construction, 1870s.

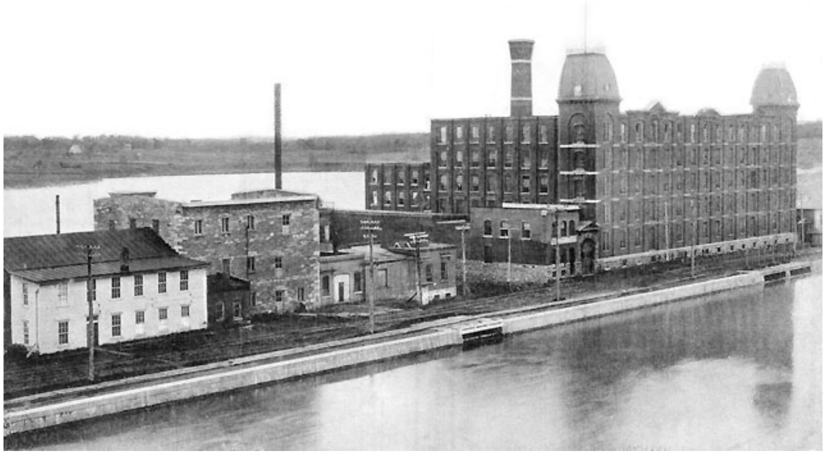


Figure 25: Original woolen mills on the Cornwall Canal

Infrastructure on the St. Lawrence River

The early settlements up and down the St. Lawrence River relied much on the river. Four decades after Cornwall's settlement, the Long Sault Rapids were still an impediment to commerce and development. During the War of 1812, substantial fighting had taken place along the SLRIBS between the Canadas and United States. Fearing further conflict, the Rideau Canal was completed in 1832. The Rideau Canal provided an alternative route between Montreal and Kingston via the Ottawa River. In the event of further hostilities with the United States, the St. Lawrence River was feared to be vulnerable due to the international border. Land owner and merchants along the St. Lawrence River quickly realized that the Rideau Canal posed an economic threat to their interests and limited their access to the emerging developments and economies along Lake Ontario.

The St. Lawrence River was of such economic importance that beginning in 1834, a series of major publicly funded canal projects along the St. Lawrence River began. The Cornwall Canal was completed in 1842[13], and for the first time, provided a safe route around the Long Sault Rapids.

Industry on the Cornwall Canal

The following year in 1843, a bridge was constructed over the Cornwall Canal reconnecting the town to the southern shoreline.[14] With this land available again for development, mills were built to access the transportation afforded by the canal works. First a grist mill, then a saw and carding mill were constructed. The water from the Cornwall Canal system provided an inexhaustible supply of energy. This free and continuous supply of energy attracted industrial capital. This was the beginning of Cornwall as a mill-town.

The almost infinite supply of energy became the source of great wealth for Cornwall. The owner of the first saw mill recognized the potential offered by a woollen mill. This was the origin of the textile industry that would define Cornwall for the next century. Manufacturers and investors in both Upper and Lower Canada were attracted by the industrial opportunities found in Cornwall.

In 1871, the Canadian Canal Commission recognized the need to further develop existing waterways to assist the industrialized cities on the Great Lakes with access to transatlantic shipping. A second phase of canal construction began in 1876 and was continued until completion in 1891.[15] The redevelopment of the Cornwall Canal in the 1870s was the catalyst for a second industrial boom in the city. At the turn of the 20th century, Cornwall was a major industrial centre.

Figure 26: The Cornwall Canal and drydock.

Figure 27: Domtar Fine Papers Ltd., Pre-Seaway.

Factory Town: Cornwall, Ontario

> *"With this unlimited power... the wonderful improvement in machinery and the rapid development of electricity, the natural desire of capitalists to locate their factories where there are large works, and the spirit of fairness, liberality, and the honourable manner in which the people of Cornwall have carried out their pledges, many of them only verbal, with those already established here, who can say anything else but the future of the Factory Town is assured."*[16]
>
> The Saturday Globe, November 18, 1893

The first railway in Upper Canada was completed in 1855. The Grand Trunk Railway connected Toronto and Montreal, and it passed along the north end of the city of Cornwall.[17] This new form of transportation had the advantage of a speed not previously known before. However the economic advantages of waterborne shipping would keep the Cornwall Canal busy.

The second industrial boom spurred by the second phase of Canal investment saw more mills and factories established along the waterfront in Cornwall. In 1883, Thomas Edison personally oversaw the first commercial application of his electric light system in Canada at one of the waterfront textile mills.[18] Within the next year electricity furnished from a generating station on the Cornwall Canal was available throughout the community. The mixture of available hydro electricity and access to shipping routes meant that even more industrial capital was attracted to Cornwall.

By the late 19th century ocean ships that had travelled the ports of the world were now passing along the Cornwall Canal, destined for the inland ports of the Great Lakes. In addition to the Grand Trunk Railway, the New York Ottawa Railway constructed a trussel bridge that spanned the St. Lawrence River, and connected Cornwall to the New York Central Railway system.[19]

It was here that a big dream started. It began as a project whispered about by visionaries, the dream of a much larger canal system than the existing Cornwall Canal. A massive canal system that could handle the largest ships in the world. A canal system that would require the damming of the entire St. Lawrence River and would consume the river. This was the dream of building a stairway to the Great Lakes. The idea found the political and economic support in Canada, but it was the American neighbours on the southern shore of the river that were unconvinced.

Figure 28: Canadian nation building.

Figure 29: The Seaway Dream.

Figure 30: The St. Lawrence Seaway captured national attention.

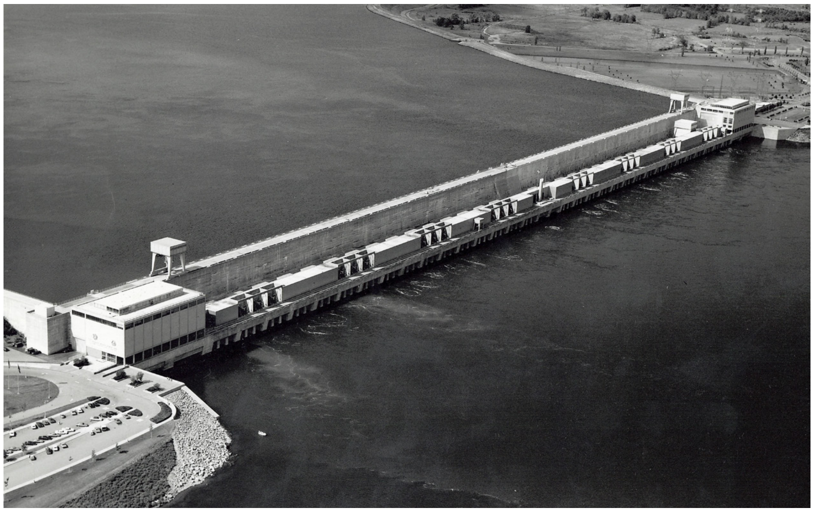


Figure 31: The Moses-Saunders Power Dam.

The St. Lawrence Seaway & Power Project Realized

During the first half of the 20th century there was very little interest in the United States to construct an expanded canal system on the St. Lawrence River. In the late 1940s and early 1950s, American disinterest in the proposed deep water canal along the St. Lawrence River became a political issue in Canada. Following the triumph and victory of the Second World War, Canada's economy was growing an at unprecedented rate. New levels of wealth and international position further propelled the 'Canadian experiment' to tackle this mega project. The Canadian perspective of the St. Lawrence River as an exclusive national resource meant that the Seaway Project was seen as a physical symbol of nation building. This feeling was only compounded by American objections and resistance to the project. Without US support, Canada would build an All-Canadian Seaway. In the face of American resistance to the project, and playing on the Canadian nationalism, Prime Minister St. Laurent insisted that Canada go it alone. In July 1951, Ontario Premier Frost demanded that the US, "Please, get out of the way and let us get on with the job."[20]

It was only at the insistence of Canada going it alone that the American government could be convinced to participate in the SLS&PP with Congressional approval in 1954.[21] No project like the Seaway had been undertaken before. This was not simply the first hydroelectric and canal project of its scale, it was the first of either kind to be undertaken by two sovereign nations. As an inland waterway project, it exceeded both the Suez Canal and the Panama Canal in both distance and scale.[22] It also marked the final nail in the coffin for the Canada's Maritimes as the economic centre of Canada.[23]

On June 8th, 1954, the announcement was made, the St. Lawrence Seaway & Power Project was going ahead.[24] The mega-project was envisioned in two parts. The first was the engineering of a navigable deep water channel, the Seaway portion of the project. The second portion of the project was the construction of a large hydroelectric dam in Cornwall, and the subsequent construction of two control dams on the river. These dams would create Lake St. Lawrence where the Long Sault Rapids on the St. Lawrence River had once been. Two-hundred and fifty-nine square kilometres of land was flooded, displacing thousands of people and flooding several historic St. Lawrence River communities.[25] Harnessing all of the power of the St. Lawrence River, the Moses-Saunders Power Dam would provide clean energy. The construction on the SLS&PP began on October 1954, and the waterway opened to traffic on April 25, 1959.[26] The completion of the St. Lawrence Seaway made the Cornwall Canal obsolete, and it was closed for the final time on June 30th, 1958.[27]

Figure 32: Seaway Power Project, Life Magazine, July 13, 1959.

From St. Lawrence River Valley

Massive temporary dams were constructed that diverted the flow of the St. Lawrence Rive to allow for construction of the Moses-Saunders Power Dam. Centre to upper right is the Cornwall Canal. In the upper left of the image you can see the beginning of the excavations for the deep water Seaway channel that would allow large ocean vessels to reach the Great Lakes.

Figure 33: Moses-Saunders Power Dam, Life Magazine, July 13, 1959.

To St. Lawrence Seaway Valley

The previous river valley is now flooded, producing Lake St. Lawrence above the completed Moses-Saunders Power Dam. The Cornwall Canal remains at centre right, but is now truncated by the Power Dam. The straight deep water channel is at the left of the image ready for shipping traffic.

Figure 34: Aultsville, Ontario 1952

Figure 35: Aultsville, Ontario 2014

Diem Adimere Aegritudinem Hominibus

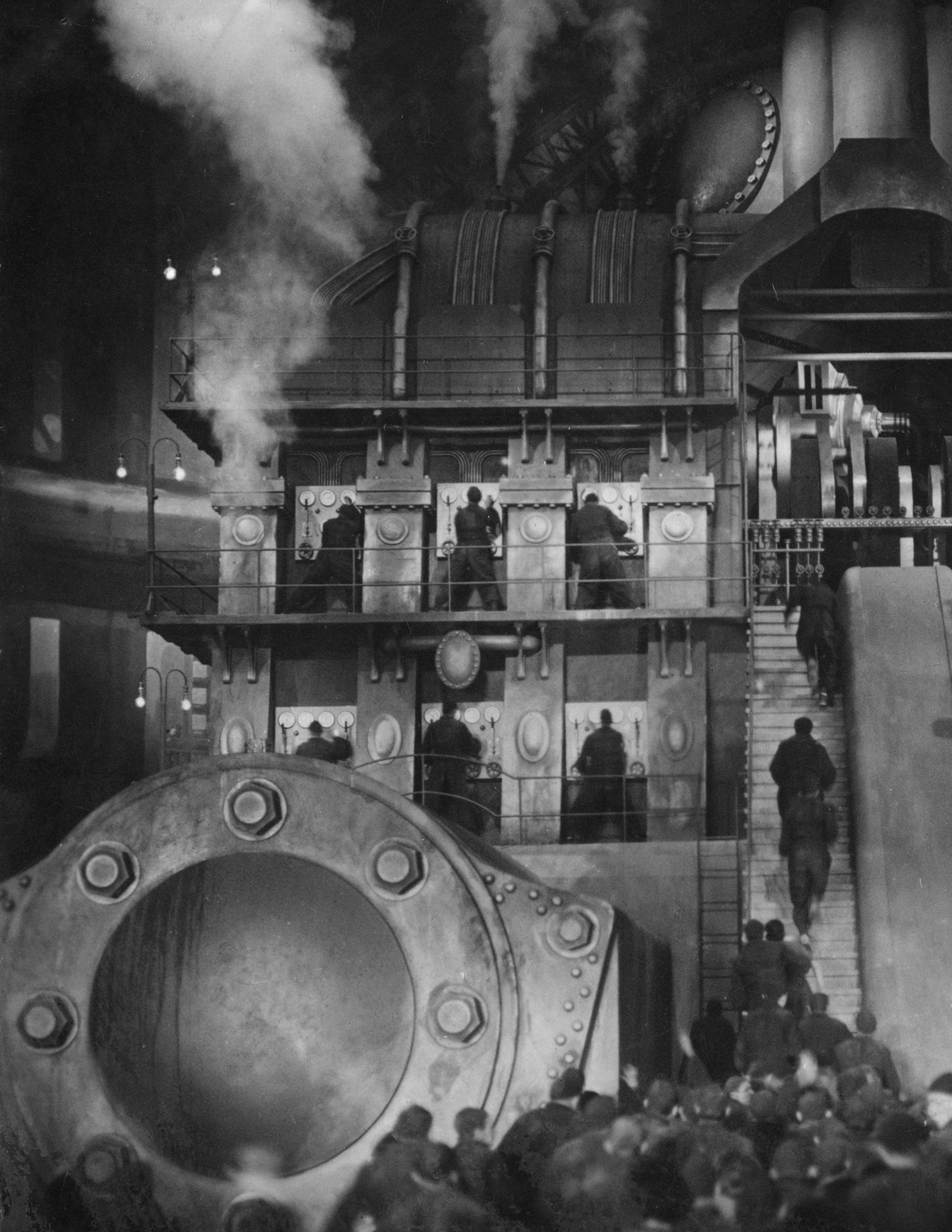
In the words of Cicero, time heals all wound. Six decades apart, these two images are taken at the same location. The images are at the intersection of Aultsville Road, and Highway #2, looking north up Aultsville road. The raised horizon in the image on the facing page is now the shoreline of Lake St. Lawrence. What was once developed farmland has once again returned to natural processes. Aultsville, Ontario was once the home to many families, now it is part of the Upper Canada Bird Sanctuary, and is the home to an array of wildlife.

Figure 36: Aultsville, Ontario 1952

Figure 37: Aultsville, Ontario 1956

Figure 38: Aultsville, Ontario 2014

Figure 39: The Long Sault Parkway



Early 20th Century Urban Design Trajectories

“Flow on stupendous river to the sea,
Roll on in beauty and in majesty,
There is no longer grandeur in your tide,
There is no mystery in your bosom wide;
You symbol toiling man’s achievement well
We hear the pulse of labour in your swell,
The dashing roar of energy and will
Resounding evermore and never still!”[28]

Isidore (pseudonym), 1889.

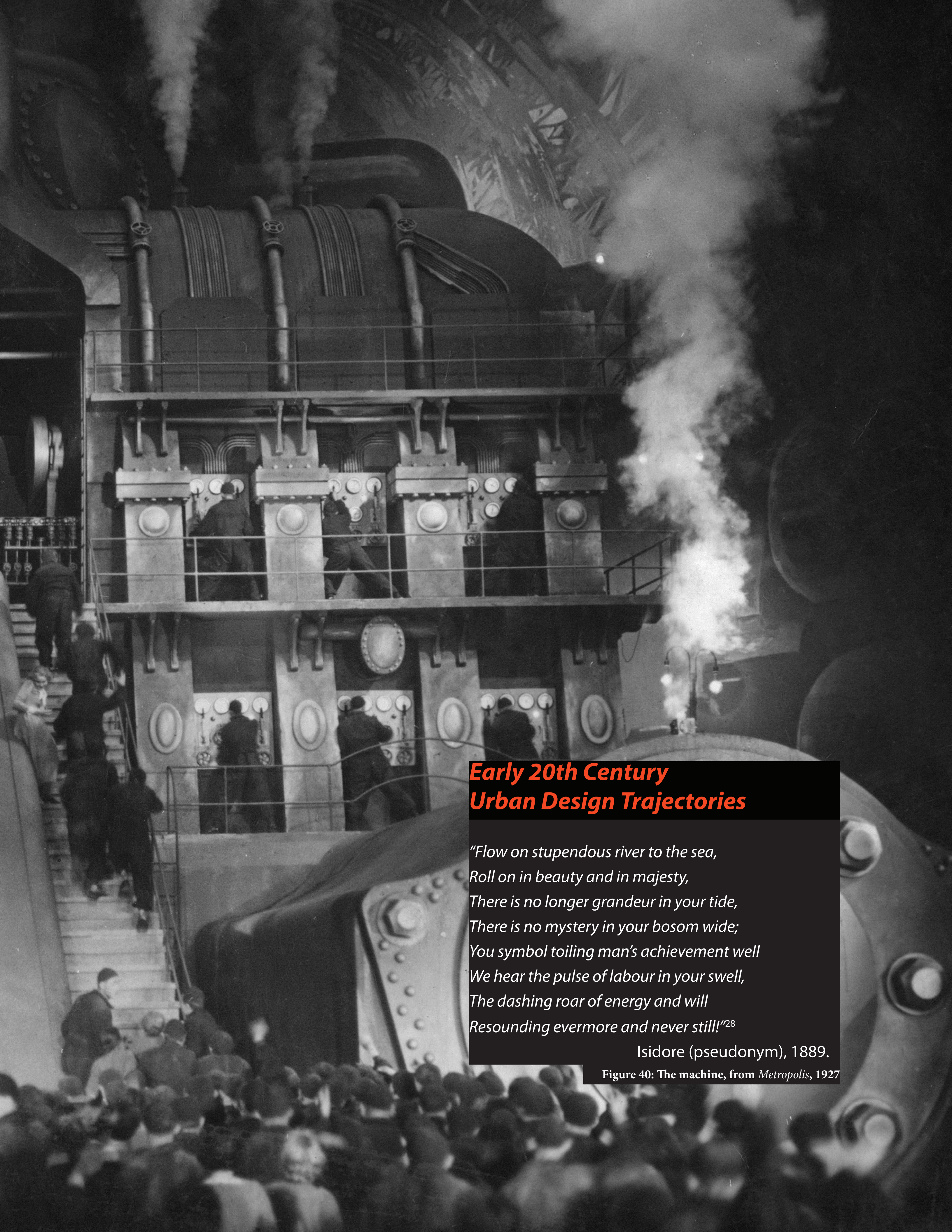


Figure 40: The machine, from *Metropolis*, 1927

Figure 41: ‘The City Rises (La città che sale)’, Umberto Boccioni, 1914.

Figure 42: Tony Garnier’s plan for ‘Une Cité Industrielle’, 1904.

Futurist Architecture

The new technological advances at the dawn of the 20th century changed the way we lived in our cities. This was the emergence of a society that prized speed and technology above all else.

In February 1909, the artist Tommaso Marinetti, published the Futurist Manifesto, which in part called for the rejection of the past, and a celebration of the absolute, as evidenced by our creation of the eternal, omnipresent speed.[29] In his first major Futurist work, Italian painter Umberto Boccioni painted 'The City Rises' in 1910. The painting captures the construction of the city along a skyline covered with chimneys. The centre of the painting features the labour of men and horses, beasts of burden, flowing seamlessly together in the exertion of their work.

The Italian Futurists first began to capture the experience of living in this new age, but it fell to the architects to imagine how better to live in this new age. In 1914, the "Manifesto of Futurist Architecture" was published.[30] A contributing author to the manifesto, Italian architect Antonio Sain'Elia had become involved in the Futurist movement in 1912. Exhibited in 1914, a series of drawings entitled "New City" (Città Nuova) illustrated his ideas for the Futuristic city.[31] His designs envisioned a highly mechanized city that embraced the scale of technology. The city would be made up of colossal structure of buildings and infrastructure. Sain'Elia died during first World War in 1916, his plans unrealized.

Reaching for Industrial Utopia

Technology had created a new speed that the architects of the historic city could never have imagined possible. It was questioned if the historic city could even adapt to this new age of the machine. Architects began to see the historic city was an obstacle to progress. The historic city had just become into being through industrialization, resulting in people residing adjacent to industry and infrastructure.

First exhibited in 1904, published in 1918, French Architect Tony Garnier's work entitled "An Industrial City" (Une Cité Industrielle) envisioned an urban industrial utopia.[32] His solution to the challenge of industry in the contemporary city was to employ a zoning strategy that separated the core functions of the city. Housing was separate from health and leisure, and significantly detached was the industrial zone.

Garnier believed that the new city would be forever attached to industry. Garnier also believed that progressive urban planning would have to be attracted by the proximity of raw materials to production, or "the existence of a natural force that can be used for work".[33] The city for 35,000 was organized on a zoning strategy that organized the city in broad strokes.

Figure 43: 'Ville Radieuse' (The Radiant City), Le Corbusier, 1924.

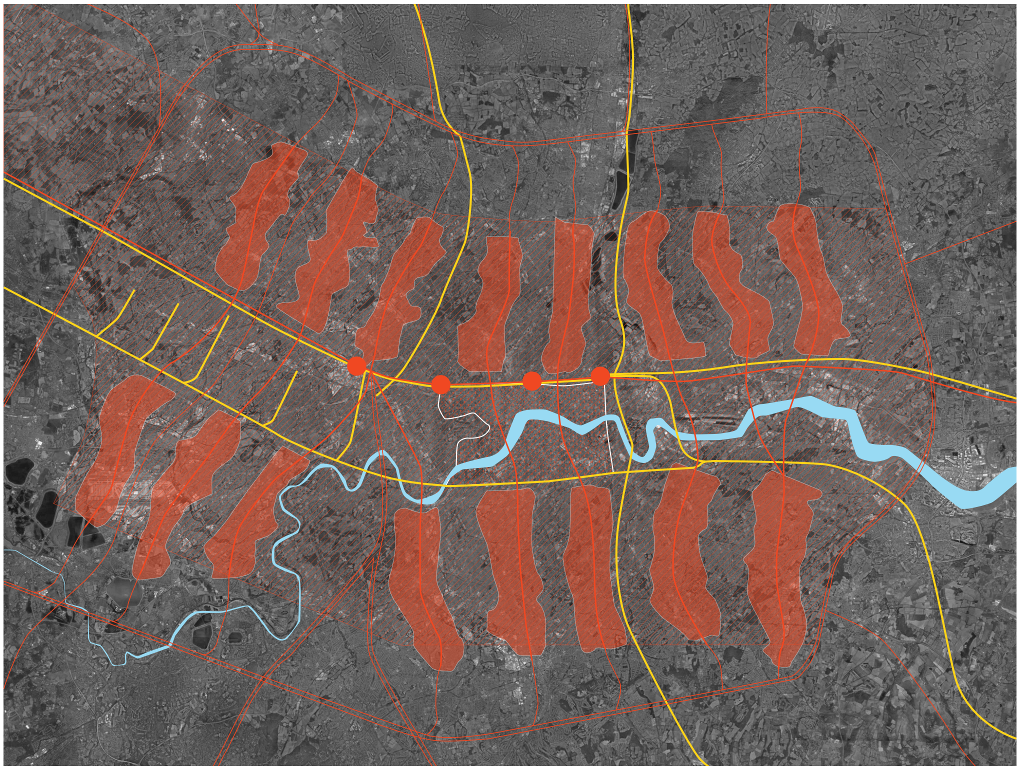


Figure 44: MARS Group plan for a Modern London, 1942.

Modernist Functionalism

Founded during the inter-war years in 1928, CIAM (Congrès internationaux d'architecture moderne) was organized to promote the architectural principles of the Modern Movement. Presided over by Le Corbusier, CIAM adopted the idea of zoned functionalism from the work of Tony Garnier as the solution to fix the historic city. CIAM believed that the social and economic challenges of their day were a result of a built environment that was not suited for contemporary modern life of speed and technology. CIAM believed that modern architecture could be employed like a social and economic tool, resulting in an improved world.

At the fourth CIAM conference held in Athens in 1933, CIAM first sought to apply the principles of the Modern Movement to urban design. The theme of the conference was 'The Functional City', at which the members of CIAM studied existing cities in Europe, and demonstrated how their planning strategies could create a more efficient and better city.[34] Recognizing that the historic city had simply grown into being throughout industrialization, CIAM's solution to the ramshackle city was to reorganize the city by a rigid zoning strategy directed from the top down. The functions of the city would not be allowed to mix together. By orchestrating the city from the top down, the city could be organized to function accordingly in the new age of speed and the machine.

British Modernism: London is Unplanned!

At the invitation of CIAM, Wells Coates, Maxwell Fry, P. Morton Shand, and David Pleydell Bouverie founded the Modern Architecture Research (MARS) Group in March 1933.[35] Following CIAM IV, the MARS Group had taken it upon themselves to imagine a new city of London for the modern age. The historic core of the city was retained to provide its historic function, but the remainder of the city was to be bulldozed to replaced by appropriate zones of function. The east end port and west end were to be used for industry, with residential boroughs radiating from the historic centre via expansive parkways.

It was in Britain that the principles of the Modern Movement found one of its most receptive audiences during the rebuilding that followed the destruction of the Second World War. British modernism subsequently would play an important role in modernism throughout the British Commonwealth, foremost among them in Canada. The work of the MARS Group had a direct impact during the planning of the Seaway Project when founding member, Wells Coates, travelled to the St. Lawrence River region to take on the task of redesigning an existing community from scratch.

The Iroquois New Town Plan Case Study

> *“We are the men of the great hotels, the railway stations, the immense streets, colossal ports, covered markets, luminous arcades,* straight roads, ***and beneficial demolitions****.”*[36]
>
> Antonio Sant’Elia
> *Futurist Architecture*, August 1914

Figure 45: The Iroquois Lock and Control Dam

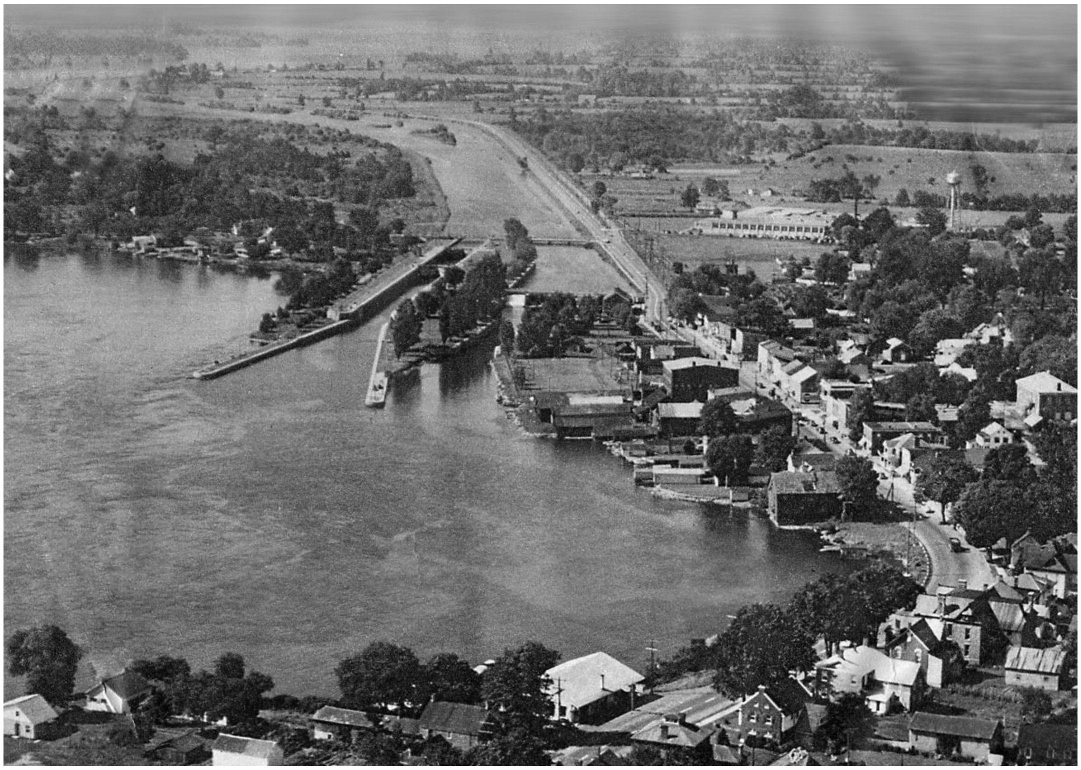


Figure 46: Iroquois waterfront prior to the Seaway Project.

Figure 47: Village of Iroquois prior to the Seaway Project.

Wells Coates & Iroquois

Wells Coates, a member of the MARS Group and CIAM, was a Canadian-born British Architect. He first fell in love with London while visiting there during his service as a pilot in the Canadian Army during the first world war.[37] He spent the interwar years in London advancing the principles of the Modern Movement. He attended CIAM IV in 1933, and turned his attention to urban design with the MARS Group's 'Plan for London'.[38] Following his service with the Royal Air Force during the second world war, Coates turned down many job offerings in academia and industry, expecting large architectural planning commissions following the war.

Coates did not find the large commissions in Britain he had been expecting after the war. A Conservative government elected in the autumn of 1951 slowed down reconstruction efforts in Britain for all but essential work. Coates looked to postwar Canada where the economy of raw resources offered promising opportunities. In July 1951, while on a business trip to Montreal, Coates learned of the Canadian proposals concerning the planning and construction of the SLS&PP.[39]

Iroquois Prior to the Seaway Project

The village of Iroquois was founded in 1812 on a point of land on the north shore of the St. Lawrence River. The point of land, and the adjacent sheltered bay, had long been a popular camp spot for the native people of the St. Lawrence River Valley. In 1812 the British built a fort on the point, and a grant of land was made for the provision of building the fort. Located above the Long Sault Rapids near Cornwall, Iroquois was at the bottom of the Galop Rapids. The Galop Canal began in Iroquois to overcome these rapids. By 1950 the village of Iroquois had a population of 1,100 with much activity centred on the waterfront canal lands.

Coates' investigations into the SLS&PP led him to the discovery that the village of Iroquois was to be wholly demolished and flooded. Coates had found his opportunity in the 'beneficial demolitions' of progress. Subsequently, this destructive act would require the design and construction of a new town. Coates jumped at the opportunity to rebuild on this blank slate. This was occasion that Coates and his companions had only dreamt about throughout the 1930s and 40s. Coates was not merely satisfied with rebuilding a community of 1,100, not when the entire project offered the opportunity to combine community, industry, and infrastructure. In definitive modernist ambition, Coates designed a plan far beyond what was required. Planning to attract industry and families from Britain during the British flight, Coates designed the new plan for Iroquois that was very similar to the designs for the British Modernist New Town. He projected that the population would reach 40,000 by the end of the 1960s.[40] If you build it, they will come.

🟦 **Pre-Seaway River**
- Shoreline village of Iroquois
- River rapids

⬜ **Seaway River**
- Flooded town site
- New shoreline

🟥 **Seaway Infrastructure**
- Control Dam
- Seaway lock

▨ **Neighbourhoodships**
- Residential housing estates
- Each with an identical form

▨ **Light Industry**
- Industry cloes to house
- Clean industry

▩ **Heavy Industry**
- Relies heavily on port and rail
- British manufacturing firms

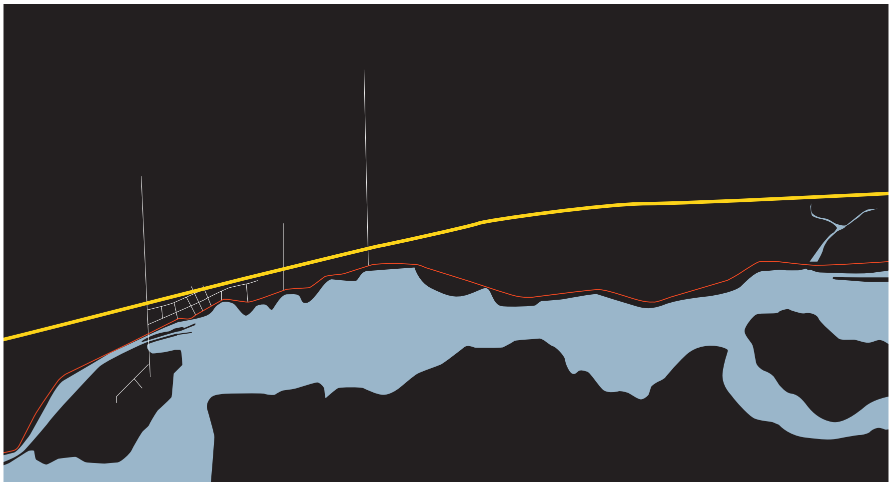


Figure 48: Iroquois, Ontario, 1951.

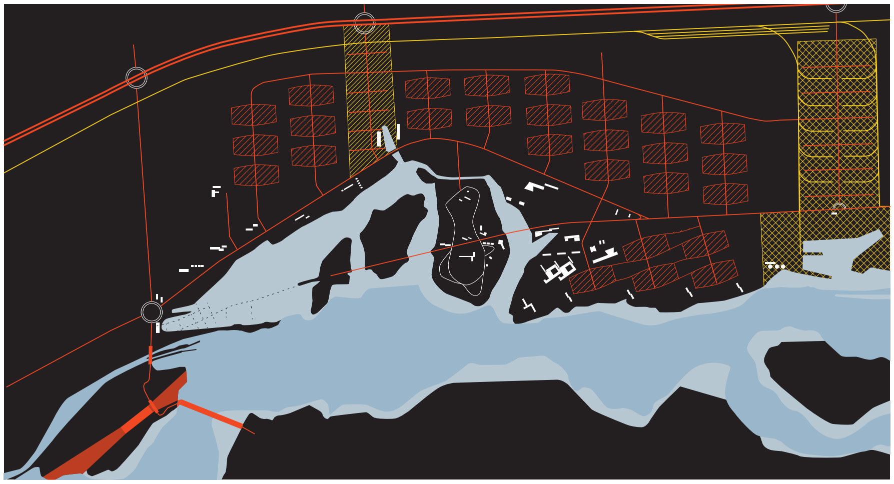


Figure 49: Iroquois New Town plan, Wells Coates, 1952.

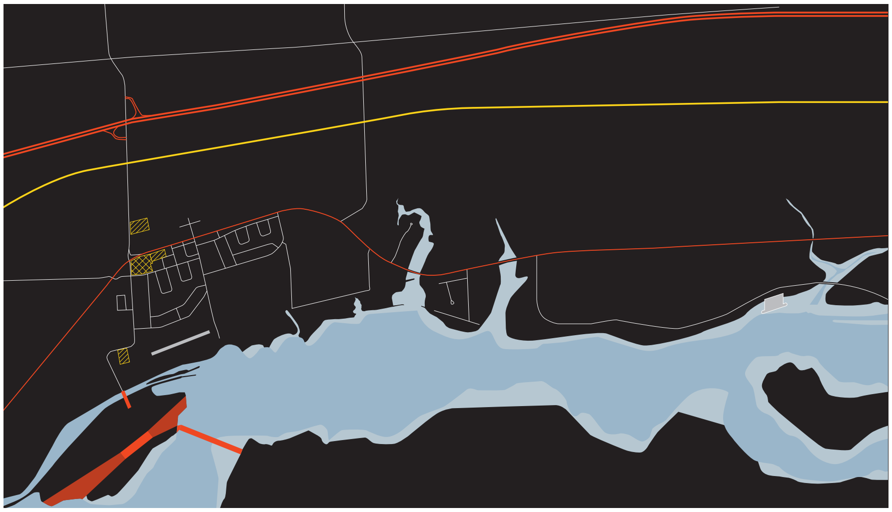


Figure 50: Iroquois, Ontario in 2014.

Iroquois New Town, the Seaway Vision

In September 1952, Coates travelled between London and Canada, and was appointed planning consultant by the Iroquois Municipal Council.[41] Coates was charged with preparing a pilot plan for Iroquois New Town, and in 1953, the Iroquois Planning Board approved his designs, and they were adopted by Municipal Council.[42] That autumn, Coates' design for the Iroquois New Town were formally submitted to the Department of Planning and Development (DPD) of the Province of Ontario. The plans were approved and this fact alone illustrates the excitement and expectations around the SLS&PP at the time.

Coates believed that the Iroquois New Town could attract post-war industry from Britain. Half of the proposed New Town's population's of 40,000 would be British expats who were looking to leave Britain for the promise of new opportunities in Canada.[43] Coates believed that the Seaway infrastructure combined with the central location of Iroquois along Seaway would be beneficial to industry. He further bolstered these advantages by proposing a new rail connection between Ontario and New York State by way of the proposed international Iroquois control dam. This rail link would connect the Canadian National Railway with the New York Central Railway.

The DPD was not convinced that the Iroquois Planning Board could oversee Coates' ambitious plans. When the Ontario Government was confronted with the practical realization of the requirement to redevelop and construct new communities along the Seaway to replace those to be inundated, the Provincial Government looked for an exit strategy. The Provincial Government had already ceded control of the Canadian portion of the project to the Ontario Hydro Electric Commission (OHEC), so they turned over the redevelopment requirements to them as well.[44] OHEC was primarily interested in developing the Seaway and Power Project, and the responsibility to address the community redevelopment was not a priority.

In the summer of 1953, Wells Coates objected to the Seaway Committee of the Ontario Association of Architects concerning the way the OHEC had been treating the Iroquois Planning Board.[46] Refusing to meet with Coates or the Iroquois Planning Board, OHEC had been developing their own designs, regardless of what had been approved at the municipal level. OHEC had been given an absolute authority over the project, and had little interest in the goals and ambitions that had taken hold in Iroquois. The sun had set on the modernist planning and urban design aspect that had accompanied the dream of the SLS&PP before construction had even began. Coates' vision for Iroquois New Town plan was never realized.

Figure 51: Seaway Construction in Iroquois

Figure 52: Moving a Home in Iroquois, 1955.

Figure 53: Queen Elizabeth in Iroquois, 1959.

Iroquois Post Seaway

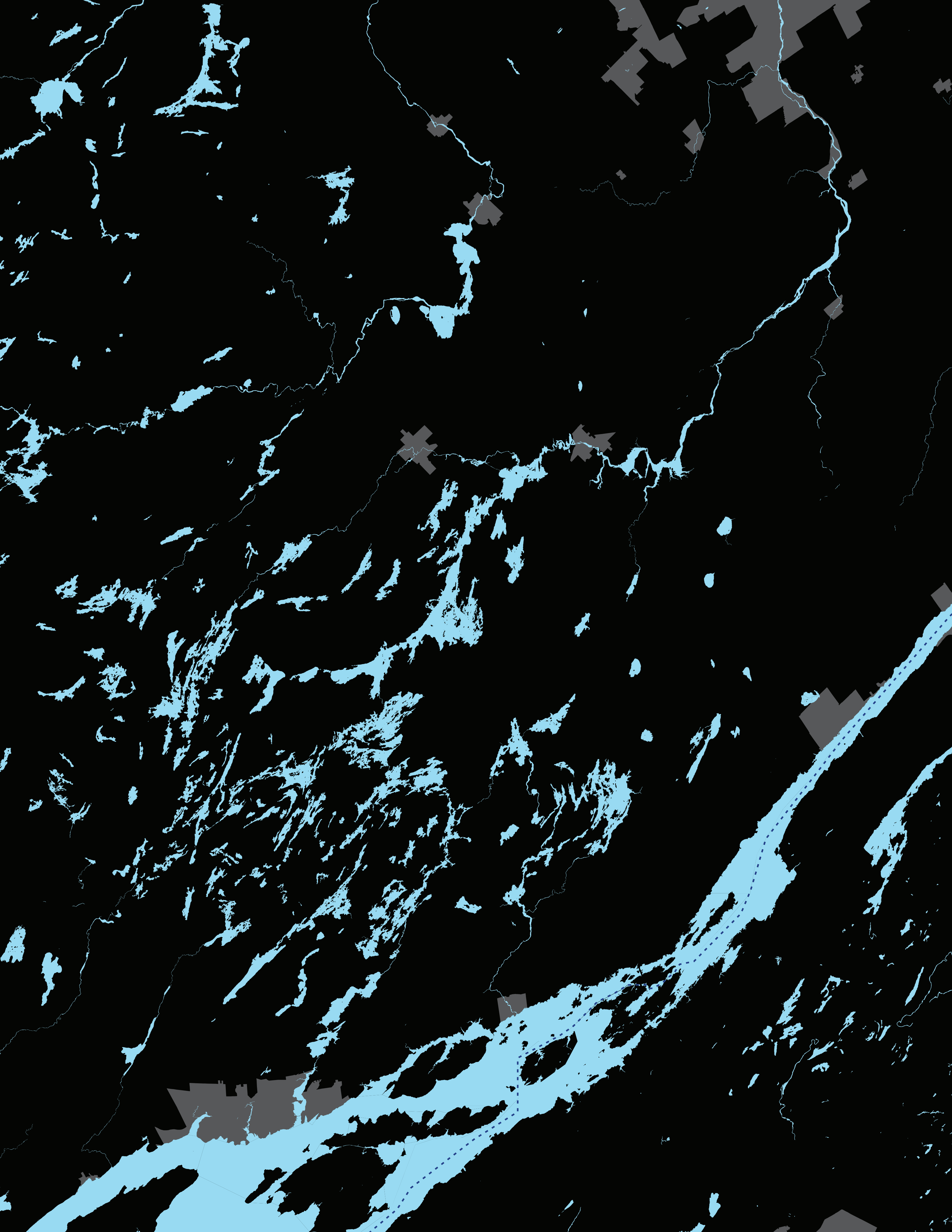
OHEC's own redevelopment plans for Iroquois saw fruition. The modest plan saw the village site relocated two kilometres north of its pre-Seaway location. The village of Iroquois was no longer located on the shores of the St. Lawrence River as the old site had been. The point of land where the fort had been constructed by the British in 1812 became the site of a control dam and a lock on the Seaway. The new village of Iroquois was removed from this aspect of the landscape. The new community was now located along the new motorway. Because the historic commercial strip along the water had been demolished and inundated, one of the first strip malls in Ontario was built to replace it. The opening of the strip mall was an event of such magnitude that Queen Elizabeth was on hand for the opening. Today the village of Iroquois is quite similar to the original design of the OHEC. Minimal growth and development has occurred. The population of the village of Iroquois in 2011 was 1,139.

Who is to say if the realization of Coates' ambitious plans would have had a different outcome. In the context of this work, there is no need to speculate. Coates' drawings and design for the Iroquois New Town Plan act as a testament to the optimism and zeal that existed at the early stages of the SLS&PP. From Canadian politicians that insisted that Canada would go it alone without US support, to the small village of Iroquois, Ontario embracing the ideals promoted by CIAM, something big was happening. These early days of the project were a time of great expectations. The Seaway Project was an unstoppable force, it would tame the mighty St. Lawrence River and spur a new industrial heartland along its banks.

Coates clearly understood the promise of the Seaway Project. His passion for the project saw him relocate for several months from London to Iroquois. Until the end he never believed that his plans would be shelved by the OHEC. In the end, the absolute authority of the OHEC was no match for Coates nor the people of Iroquois. There was a massive piece of infrastructure to construct, and the needs of the local condition were of little concern. This position that would permeate throughout the construction of the Seaway Project would create a lasting trauma on the civic landscape of the Seaway Valley.

Nearly fifteen years prior to the Modernist triumph of Expo '67 in Montreal, Coates had created the plans for a city along the Seaway that reflected the best principles of design embraced by CIAM and the MARS Group. How history could have been different for the village of Iroquois and all the other communities that were along the Seaway shore. After Coates, OHEC would simply impose their designs.

Figure 54: Entrance to the Galop Canal Today.



The Post-Seaway Trajectory

"Here at last! Now nothing stands in the way... We will benefit most by this great undertaking both during construction and afterwords, as will start a pattern of expansion, progress, and prosperity heretofore not experienced in the history of Cornwall and the whole of Eastern Ontario."[47]

Mayor Horivitz
Standard-Freeholder
June 8th, 1954

Figure 55: St. Lawrence International Border Segment

Figure 56: Moses-Saunders Power Dam, 2012

Figure 57: Cornwall, Ontario 2012

Post-Industrial

Following the completion of the SLS&PP, the dream of a new industrial heartland quickly went awry. In many ways, the Seaway Dream was over before it even began. Within the first year, Cornwall's largest employer, Canadian Cottons, a textile manufacturer, closed and laid off 1,300 workers.[48] This unforeseen manufacturing closure, combined with the employment loss of 12,000 workers following the completion of the Seaway Project resulted in the Federal Government labelling the city of Cornwall as economically depressed in 1959.[49] This beginning of the post-Seaway Project period was not what was envisioned. In Cornwall, planners for OHEC had set aside massive tracks of land to the north of the city expecting the development of new heavy industries. The industrial capital never manifested, and these lands were left undeveloped. The story of the expectations and promise surrounding the Seaway Project and the outcome it produced is a cautionary tale: visions and reality often do not line up.

The Seaway Dream of an industrial heartland never developed. The opening of the Seaway coincided with the beginning of six decades of North American industrial decline. In Cornwall, The Seaway City, all but one of the waterfront industries have closed. The Seaway remains an economically strategic piece of infrastructure for Great Lakes industry, but it has little to no economic impact on the local shoreline communities. The only impact that remains from the Seaway Project is the trauma left in its wake. Tony Garnier's belief that cities will always be attached to industry has been proven wrong by the forces of globalization. The towns and cities along the St. Lawrence River now feature urban waterfront industries that depend on ship borne trade up and down the St. Lawrence River, and out into the world.

By the early 1990s, like the rest of North America, the town and cities along the SLS&PP have had to grapple with a transition of deindustrialization. The effects of deindustrialization did not leave one community along the great waterway untouched. Since the 1960s, manufacturing has declined in Canada from 26% of GDP, to 16% in 2005.[50] Between October 2008 and June 2009, Canada as a whole lost 370,000 jobs in manufacturing, two-thirds of them were in Ontario.[51] Today Ontario's economy is still the largest in Canada, but Ontario is no longer the richest.[52]

It is here that architecture is left to pick up the pieces. While the 1950s planning for the SLS&PP was never realized, the groundwork from that period continues to define the region. The infrastructure was designed and built, but the question and challenge of industry is departing, while the modernist communities never got off the ground. Caught between the 1950s Seaway dream, and the contemporary reality, this is a place that has been affected by an absolute authority six decades ago.

Figure 58: Pre-Seaway Urban Industrial Site, 1956

Figure 59: Post-Seaway Urban Brownfield Site, 2014.

Figure 60: Pre-Seaway Urban Industrial Site, 1956

Figure 61: Post-Seaway Urban Brownfield Site, 2014.

Hypothesis

This thesis is about a trauma. The SLS&PP of the 1950s forever changed the St. Lawrence River Valley. Following the completion of the Seaway Project, the expected emergence of a new Canadian industrial heartland, the promise of the Seaway Dream, failed to materialize. Since the Seaway has opened, international economic trends have lead to a deindustrialization of the towns and cities along the St. Lawrence Seaway. No longer benefiting from their location on the Seaway, these towns and cities require a new vision for the future. The progression of these towns and cities have been stifled by the legacy of the SLS&PP. Caught between the inherent discontent of the collapsed Seaway Dream and the contemporary challenges of deindustrialization, the Seaway Valley's progression will continue to be hampered without treating this impediment.

Recent challenges with deindustrialization makes it valuable to create a demographic data study of the towns and cities along the St. Lawrence Seaway international border segment. Beyond the immediate challenges and opportunities inherent in the deindustrialization along the Seaway, the Seaway Project's impact beyond the physical landscape warrants reflection. Nearly two generations have passed since the construction of the Seaway Project but these riverfront communities continue to be defined by it. Emerging from this period of economic transition, it is time for a new design vision that copes with this trauma . A design vision for the St. Lawrence Seaway Valley that is reflective and empathetic to the St. Lawrence River.

Objectives

To analyze this hypothesis, the following objectives were addressed.

Objective 1: An analytical data set determined recent demographic and economic trends of the towns and cities along the St. Lawrence Seaway to gain clearer understanding of their current condition.

Objective 2: Case studies into the role of citizen agency, or lack thereof, in the former Seaway City determined an inherent problem with the role of the public in the civic landscape.

Objective 3: A study of emerging theory and practice for post-industrial conditions determined broader international trends in the field of urban design and citizen agency.

Objective 4: The theoretical establishment of an empathetic macro strategy to seed catalytic micro strategies within the civic landscape with the intent of bolstering localized agency. This design strategy deploys a time based process with the focus of restoring the role of the public in the production of the physical public landscape.

Objective 5: Acknowledging the legacy of destructive industrial development along the St. Lawrence River, the proposed design strategy put an emphasis on natural processes of remediation and regeneration to secure the health of the landscape for future generations.

Objective 6: The cultural history and legacy of the big waterway is reconnected to the identity of the local community.


ROTUNDA
WADING POOL
LOCK 17
LOCK 15
NORTH
CHAN
WATER
CORNWALL
ISLAND

3

The St. Lawrence River International Border Segment

The ongoing deindustrialization of the towns and cities along the St. Lawrence international border segment (SLRIBS) created the opportunity to analyze the current demographic trends to compare and contrast them to their provincial or state averages. This systemic analysis of statistical data created an index to reveal how each community has been performing during this economic transition over the past quarter century.

Creating a methodical approach to analyze how each town and city along the St. Lawrence River international border region has coped with the legacy of the Seaway Project is much more elusive. In no community were the effects of the Seaway dream more pronounced than Cornwall, envisioned as 'The Seaway City'. Clearly now post-Seaway, the city of Cornwall has met deindustrialization by transitioning to the service industry. As the centre of the Seaway Project, a more in depth study of Cornwall's history will inform the new design strategy and reveal what has handicapped the civic landscape since that time.

Figure 62: Stairway to the Great Lakes

Figure 63: CSL ship at Prescott Grain Terminal

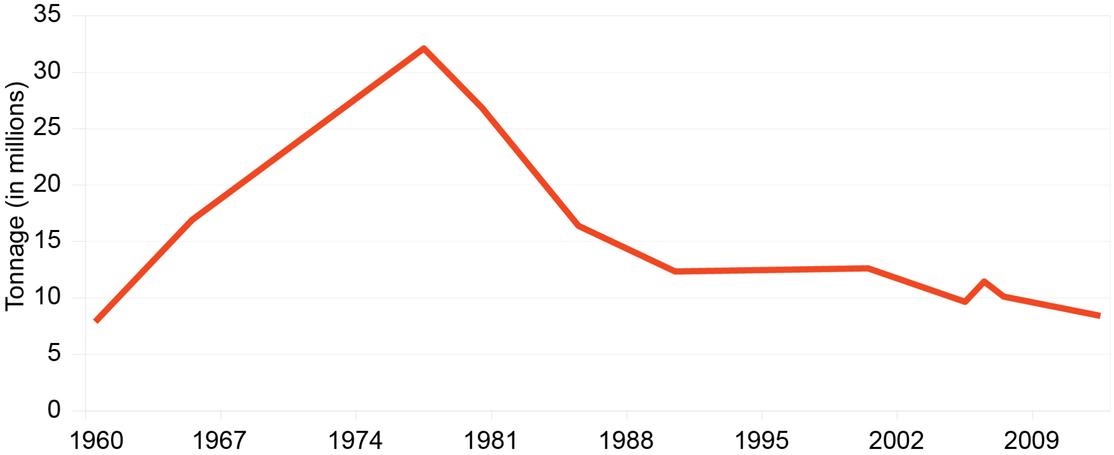


Figure 64: Grain Traffic on the Seaway

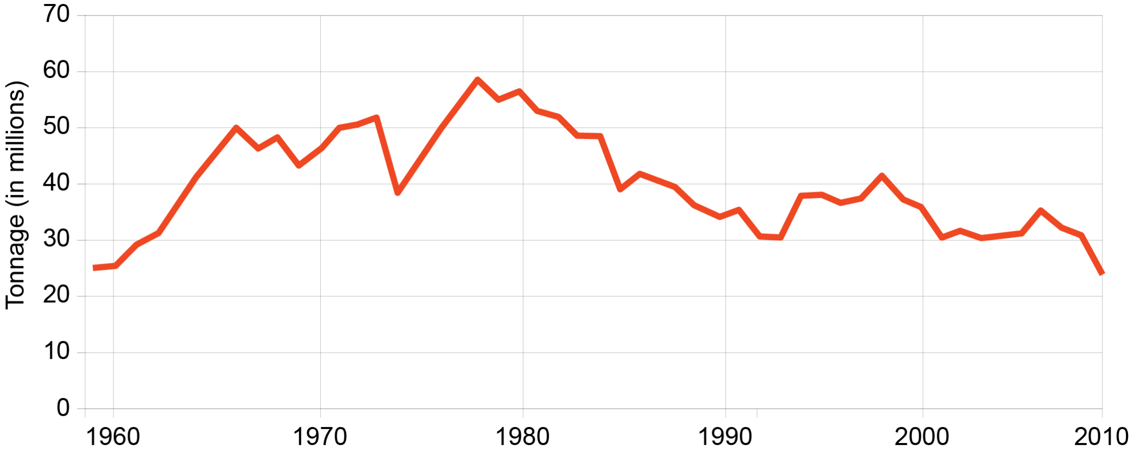


Figure 65: Yearly total traffic on the Seaway

Grain on the Seaway

The St. Lawrence Seaway was viewed by Canadian grain producers as the single most important advancement in agriculture during their lifetimes. [53] Ships could load prairie grain in Thunder Bay at the top of the Great Lakes, navigate through the Seaway and venture out to the Atlantic, bound for international markets. This trip would take a freighter a total distance of 3,840 kms. [54] The Seaway averaged 10 million tonnes in grain shipments every year, peaking at 17 million tonnes in the mid-1980s[55], and currently hovers around 8.5 million tonnes.[56] The early 1990s saw a sharp decline in shipping on the Seaway, as the collapse of the Soviet Union heavily cut Canadian grain exports[57], and lead to a Parliamentary Committee which for the first time put its operational future into question.[58]

The annual history of grain shipment along the St. Lawrence Seaway is just one of the ways the mega-project has had trouble meeting expectations. The optimism of the Seaway Project expressed in Coates' plan for Iroquois was short lived. The level of industrial spin off was minimal. A short boom during construction descended into decades of declining industry. The Seaway Project had been a success, hailed a an engineering triumph, but the vision that was attached to it was a failure.

Seaway Today

Today the vast majority of Seaway tonnage is simply bulk commodities.[59] Grain and iron ore being the greatest. [60] The system's utilization is only around 50% down from the highs of the 1960s and 1970s. The bulk commodity shipping remains an important part of North America's economy, but the system is working far below its potential. The system had been planned to greatly expand shipping into the Great Lakes, yet today the Seaway system can only support 1% of ocean-going freighters. [61]

Contrary to initial Canadian concerns, Toronto nor Hamilton ever surpassed Montreal as a major port, but Hamilton refineries did gain greatly from iron ore shipments from Northern Quebec and Labrador. [62] Toronto's port lands today are a hotly contested area of the city that are being redeveloped, but at the completion of the project in the late 1950s, Toronto was still in the shadow of Montreal. Toronto today is Canada's largest metropolitan area, surpassing Montreal by over 1.7 million people. The Seaway supports the employment of 227,000 people, including 93,000 in direct employment,[63] and $35-billion in annual economic activity.[64] The carbon free power produced at the Moses-Saunders Power Dam in Cornwall produces 1,045MW[65], enough electricity to power a city of a million people.

Moving material by ship today remains the most cost-effective means. One ship on

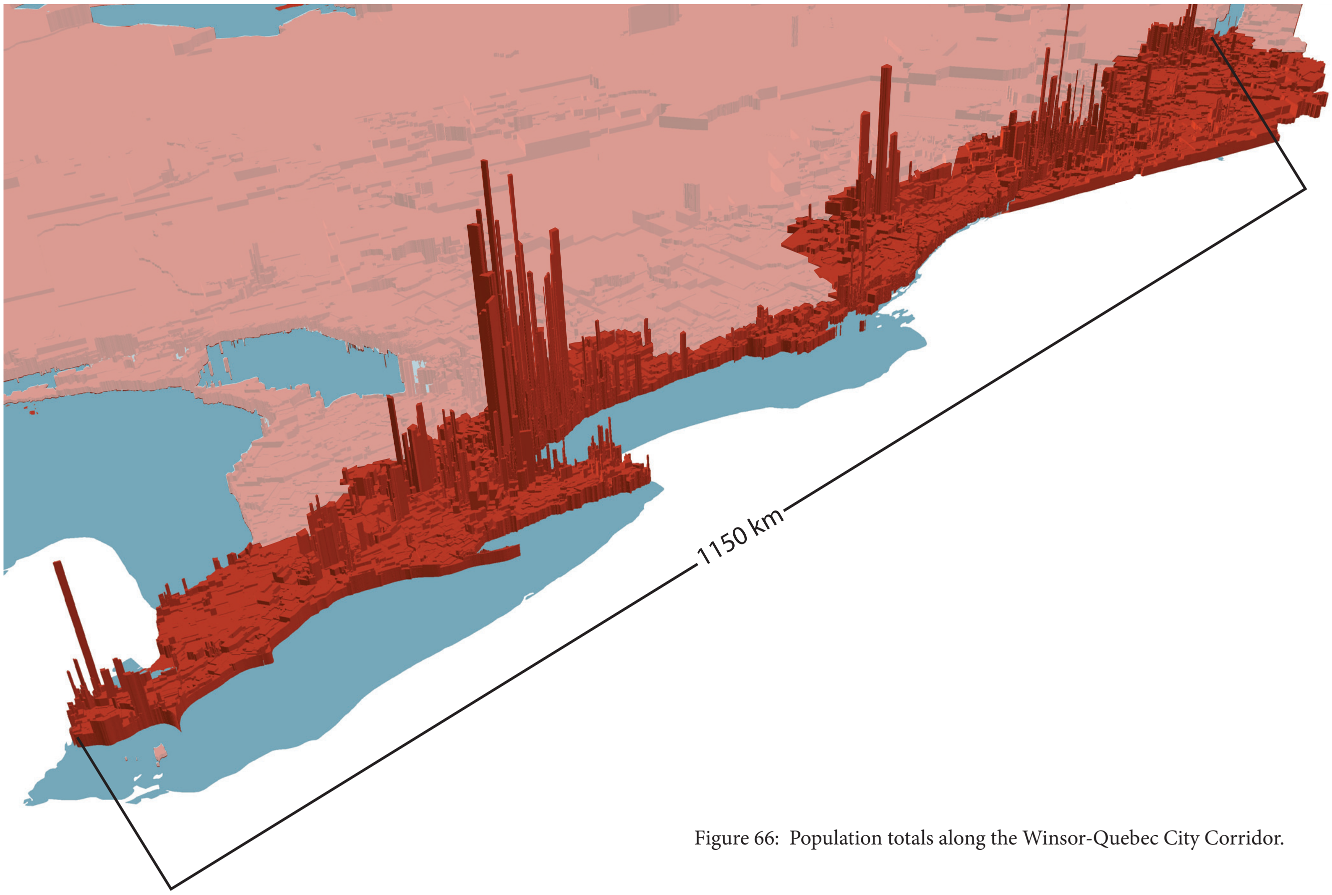


Figure 66: Population totals along the Winsor-Quebec City Corridor.

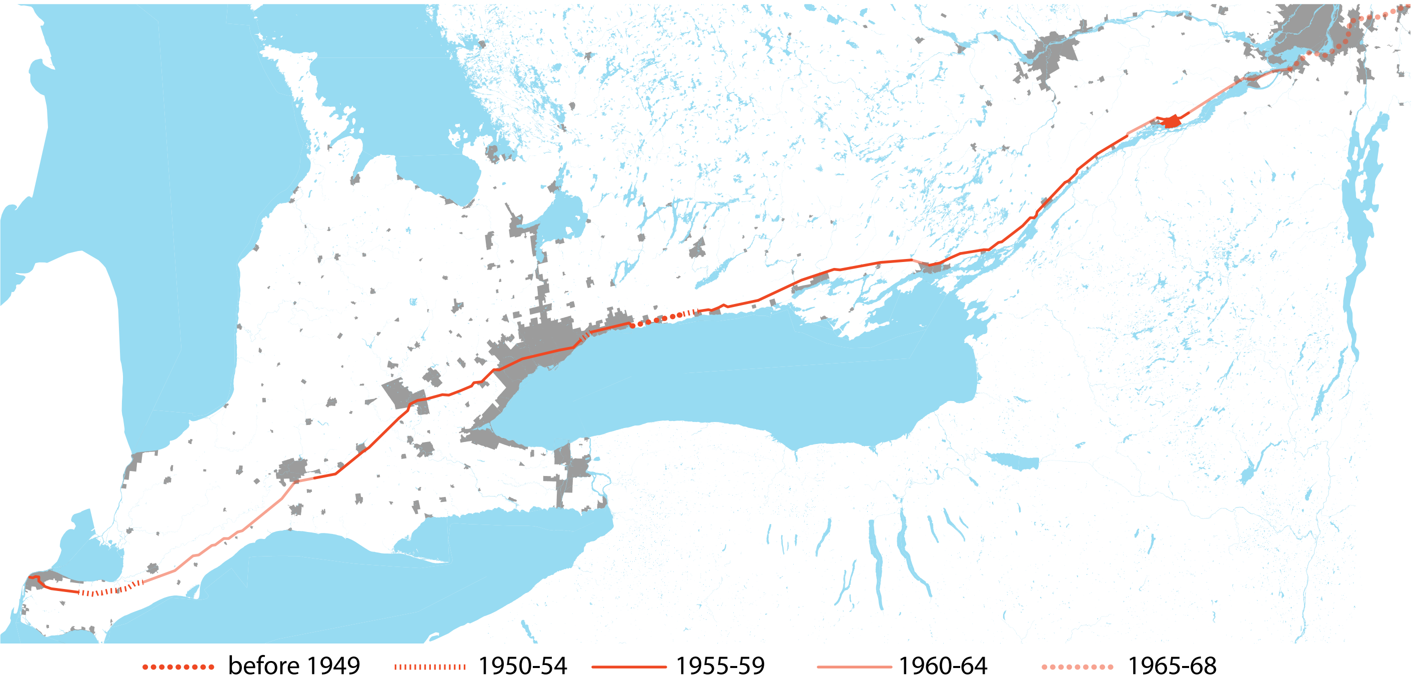


Figure 67: Construction dates of Highway 401

the Seaway represents 870 trucks removed from the highway, and is the equivalence of 225 rail cars.[66] At its peak in the 1960s and 1970s, the Seaway moved 60-70 million tonnes a year.[67] In 2012, the Seaway saw a total of 39 million tonnes, operating at 55% of its potential. [68] Since its completion in 1959, more than 260,000 vessels have used the waterway to move 2.3 billion tonnes of cargo valued at $350-billion.[69] Each ship can carry 27,000 tonnes of cargo.[70] The Seaway will remain an important industrial bulk shipper well into the future, as made evident by a recent announcement of a $500-million upgrade program that will see the system into its first century.[71]

The SLRIBS remains at the geographical centre of the Buffalo-Quebec City mega-region, representing $530-billion in annual economic activity.[72] This mega-region's economy is the largest one of its kind in Canada, the fifth largest in North America, and the twelfth largest in the world.[73] The region contains 50% of Canada's total GDP and 22 million people.[74]

Windsor-Quebec City 401 Corridor

The towns and cities along the St. Lawrence River in Ontario were founded along the shoreline. The river made for easy and quick transport in land that covered in dense white pine forests. Soon after early settlement, roads were constructed, but the speed and ease of river travel would keep it the primary transportation link. This natural connection to the river first began to fade with the completion of the Grand Trunk Railway in 1856.[75]

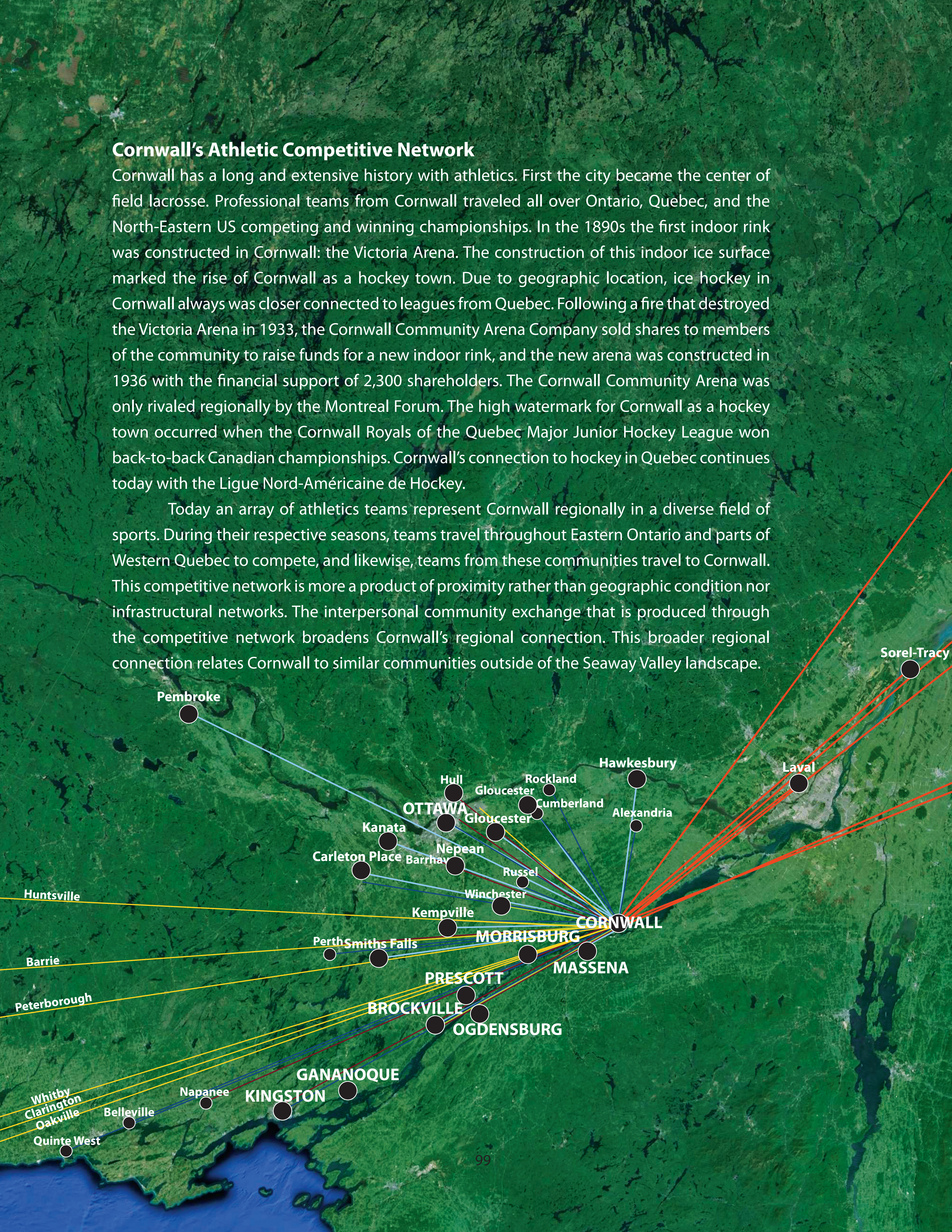
The Seaway Project held the promise of renewed focus on the riverfront of these communities. With the decline of industry, these riverfront landscape for the most part did not further industrialize. A decade following the completion of the Seaway Project, the towns and cities along the St. Lawrence River were finally completely detached from the St. Lawrence River with the completion of the Highway 401 in 1968.[76]

When historic waterfront industries closed there was no longer a demand for waterborne shipping in these communities. The original reason for these historic communities' location on the shoreline was no longer relevant. Goods and materials could be moved quickly along the new highway. The automobile afforded quick and fast personal transportation. Following its completion, Highway 401 would emerge as Ontario's primary economic artery. The cities and towns along the St. Lawrence River were like pearls strung along a necklace, and were now pearls along a much longer necklace, Highway 401.

Cornwall's Athletic Competitive Network

Cornwall has a long and extensive history with athletics. First the city became the center of field lacrosse. Professional teams from Cornwall traveled all over Ontario, Quebec, and the North-Eastern US competing and winning championships. In the 1890s the first indoor rink was constructed in Cornwall: the Victoria Arena. The construction of this indoor ice surface marked the rise of Cornwall as a hockey town. Due to geographic location, ice hockey in Cornwall always was closer connected to leagues from Quebec. Following a fire that destroyed the Victoria Arena in 1933, the Cornwall Community Arena Company sold shares to members of the community to raise funds for a new indoor rink, and the new arena was constructed in 1936 with the financial support of 2,300 shareholders. The Cornwall Community Arena was only rivaled regionally by the Montreal Forum. The high watermark for Cornwall as a hockey town occurred when the Cornwall Royals of the Quebec Major Junior Hockey League won back-to-back Canadian championships. Cornwall's connection to hockey in Quebec continues today with the Ligue Nord-Américaine de Hockey.

Today an array of athletics teams represent Cornwall regionally in a diverse field of sports. During their respective seasons, teams travel throughout Eastern Ontario and parts of Western Quebec to compete, and likewise, teams from these communities travel to Cornwall. This competitive network is more a product of proximity rather than geographic condition nor infrastructural networks. The interpersonal community exchange that is produced through the competitive network broadens Cornwall's regional connection. This broader regional connection relates Cornwall to similar communities outside of the Seaway Valley landscape.



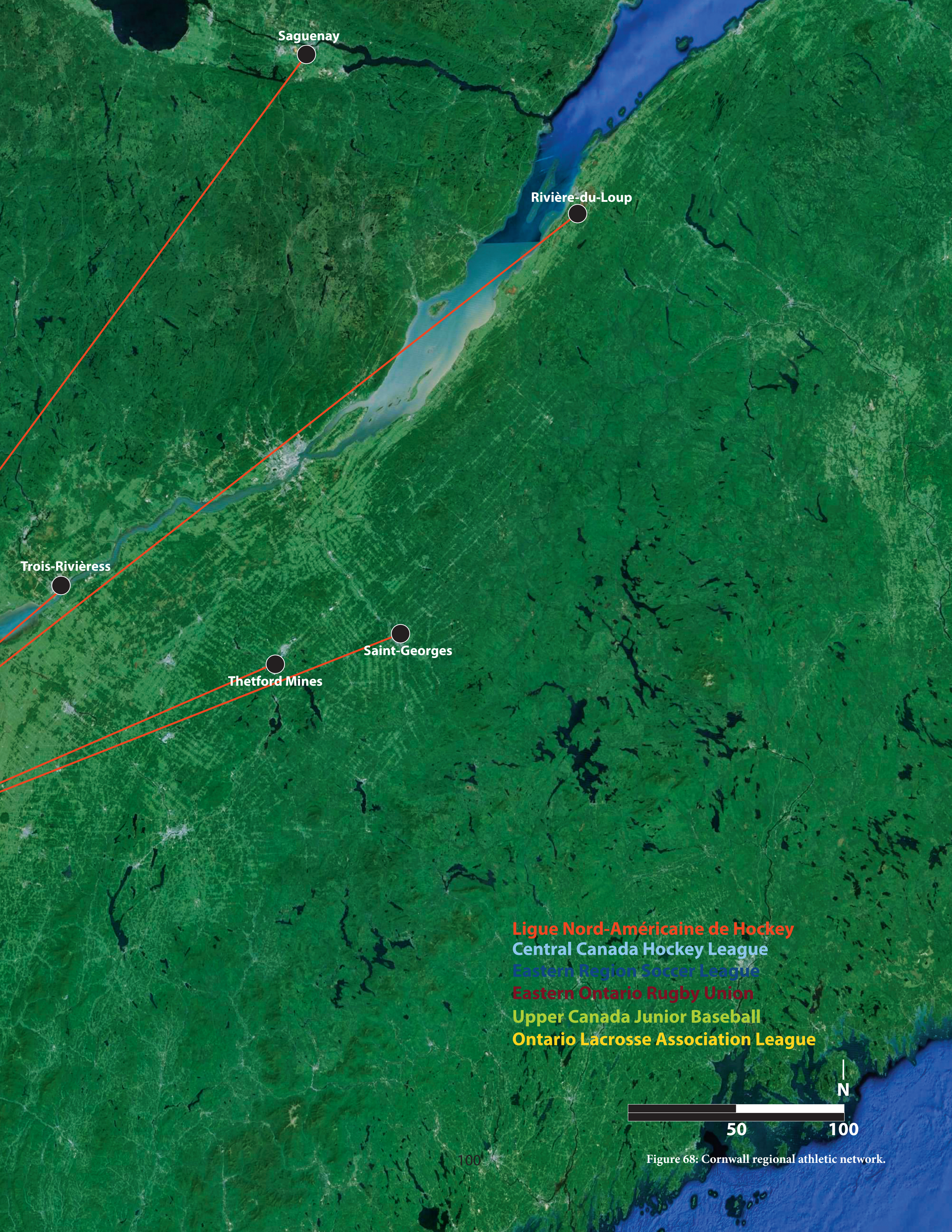


Figure 68: Cornwall regional athletic network.

St. Lawrence International Border Segment
The Emerging Second Seaway City

Cities & Towns

The post-industrial economic transition has challenged the towns and cities along the Seaway. These are communities that for the most part had historically been early industrial centres. Since the early 1990s, with the exception of Morrisburg, the population in cities and towns adjacent to the St. Lawrence River international border segment declined, and only began to grow around the mid 2000s. Ontario's population had been growing at 10% in the early 1990s, sliding to a stable 6% since the mid 1990s. During the same period the population change in the towns and cities along the St. Lawrence River reveal instability and under performance.

The post-industrial cities along the St. Lawrence River are currently in a transition. The extent of which cannot be captured purely in the phrase "post-industrial". Many of these towns and cities were directly affected by the designs of the Seaway Project six decades ago. Architects, designers, and planners created a landscape with a vision, the Seaway dream. The Seaway dream that failed to be delivered. Today these towns and cities are in many ways caught between the Seaway dream, and the reality of what unfolded since that time.

What has taken place over the past quarter century was never design nor planned by those envisioning the Seaway dream and planning the Seaway Project. Cornwall never became the mega-industrialized Seaway City as intended, but today a new Seaway City is emerging. Connected today by the 401 Highway, the towns and cities along the St. Lawrence Seaway are more interconnected than ever before. The urban centres continue to develop the adjacent territories in between, and the abundance of rural waterfront is fuels further development. The flow of capital towards development, the location along the US border, and Canada's population projection means that in the future the entire region will become a merged urbanized landscape.

Method

Neither the Canadian nor the US communities along the shores of the Seaway have been immune from the North American decline in manufacturing and industry. To begin with, an overview and current status of the St. Lawrence Seaway will be explored. This will be followed by an examination of the towns and cities along the St. Lawrence River international border segment. To understand the effects of deindustrialization on the civic landscape, a study of population flux over the past quarter century will be examined. The data reflecting population change, concerning both growth and shrinkage, can be contrasted to provincial or state averages of population growth to gain and understanding of how the local communities population is performing with respect to the macro level. The direct affect of deindustrialization, and the greater failure of the economic promise of the SLS&PP begins to be revealed through the study of individual wealth. Each individual community's average income can be easily analyzed with respect to the provincial or state averages. This economic analysis is further supported by the average dwelling value within individual communities. It is important to note the local difference in income and dwelling value when contrasted with provincial or state averages. This is reflective of the community's economic performance. An exploration of the age demographics and education level statistics will further tease out the performance of the local community. Age and education levels are reflective of the community's ability to pivot to new economic realities following deindustrialization. This is furthered by a study of the contemporary employment rate within the community. This shall be followed with figures on the town or city's density that indicates the condition of the existing communities. This is a region that is facing transition at a period fraught with challenges.

Gananoque, Ontario
Population 5,194
Est. 1789

City of Cornwall
77.7 km^2

Town of Gananoque
7.1 km^2

Gananoque, Ontario is the western most town on the shores of the St. Lawrence River on the edge of Lake Ontario. The town is located 287 km east of Toronto, and 255 km west of Montreal. Attracted by the meeting of the St. Lawrence River and the Gananoque River, the town of Gananoque was settled in 1789 by United Empire Loyalists.[77] Gananoque was an early industrial centre, featuring water powered mills, but by the 20th century had emerged as a town concerned with leisure and recreation. Located at the western edge of the Thousand Islands, Gananoque has become known as the 'Gateway to the Thousand Islands'. In the summer months the town's population swells as tourists and seasonal residents flood the small town to take in the beautiful island setting along the St. Lawrence River or cultural activities on the waterfront. There is a casino along Highway 401 and it is the second largest employer in town. There are theatres and playhouses along the waterfront. Employing 400 people, Covidien is the largest employer in Gananoque. Covidien is a manufacturer of specialized plastic paper for industrial and medical use and relies in transport from the Highway 401.

Figure 69: Commercial Street

Figure 70: Gananoque, Ontario

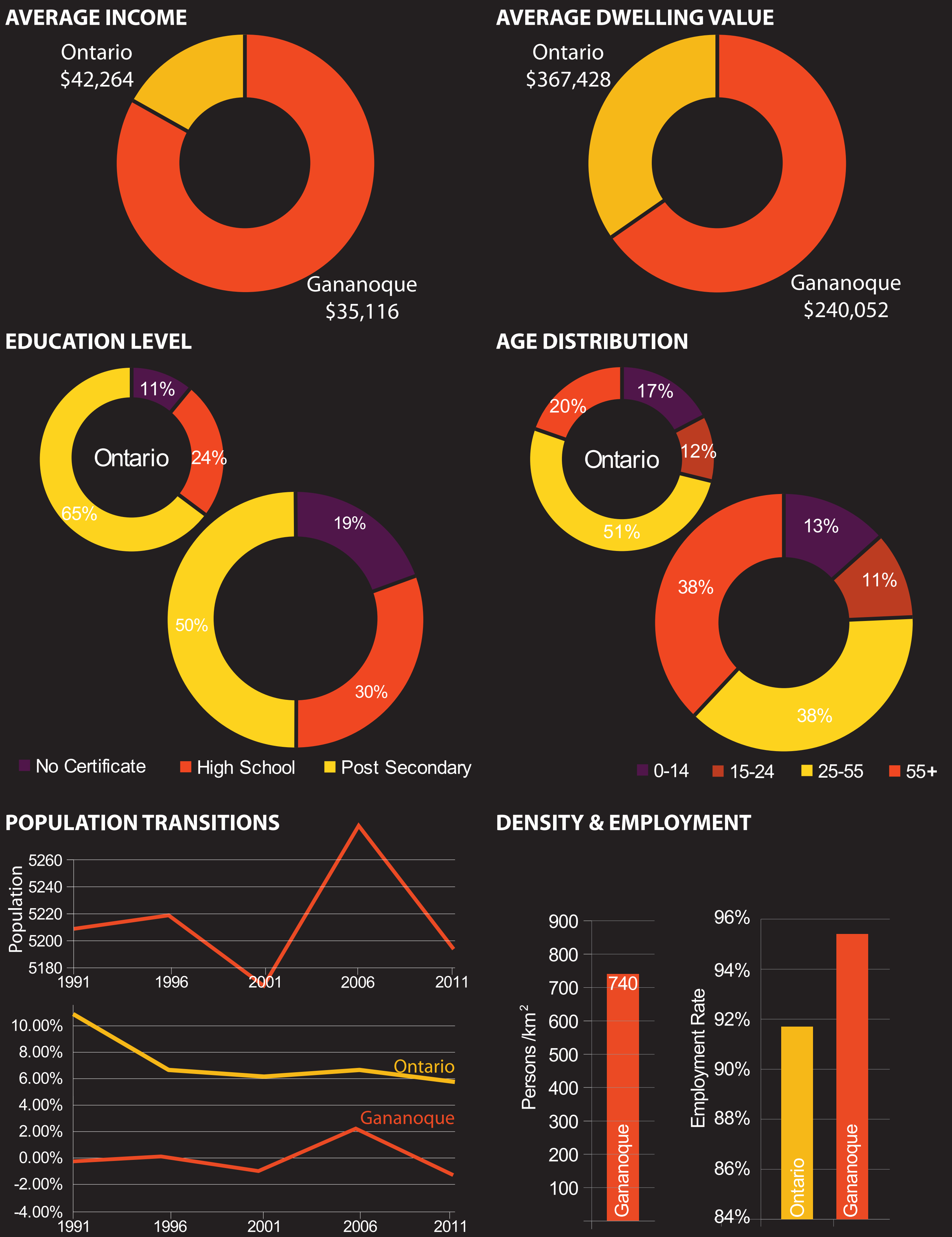


Figure 71: Gananoque data.

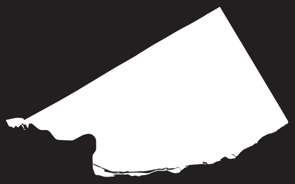
Gananoque

Gananoque is a Canadian town located at the west end of the St. Lawrence River international border segment. In the 2011 census, Gananoque had a population of 5,194.[80] Since 1991, Gananoque has seen a population low of 5,167 in 2001, followed by a population high of 5,285 in 2006.[81] Since 1996, Ontario's population growth has remained at a steady 6%, while Gananoque saw a population change of -1% in 2001, +2.2% in 2006, and followed by -1.3% in 2011. The town has an urban density of 740 people per square km.

The population of Gananoque in 2011 was made up of the following age groups: 55+ made up 38%, 25-55 made up another 38%, 15-24 accounted for 11%, and 0-14 made up 13%. In Ontario, 64.7% of the population has some form of post-secondary education, 24.2% has a high school education, while only 10.9% has failed to complete high school. The educational background of Gananoque has 50% of the population having some form of post-secondary education, 30% with only a high school diploma, and 19% who did not complete high school. Ontario's unemployment rate is 8.3% while Gananoque has an unemployment rate of 4.6%.

The average income across Ontario is $42,264. Gananoque has a higher employment rate than the provincial average, but the average income in Gananoque is $35,116.[82] The average income in Gananoque is therefore 83% of the provincial average. This figure is slightly offset in the greater cost of living by the fact that the Ontario provincial average value of a dwelling is $367,428 while in Gananoque the average dwelling is valued at $240,052, a difference of $127,376.

Brockville, Ontario
Population 21,870
Est. 1785


City of Cornwall
77.7 km^2


City of Brockville
20.9 km^2

The city of Brockville, Ontario is located on the western half of the SLRIBS. Located along the St. Lawrence River, Brockville is 338 km east of Toronto, and 206 km west of Montreal. Brockville was settled by United Empire Loyalists in 1785.[83] Being on the portion of the St. Lawrence River where the 1000 Islands begin, Brockville lacked the hydrological energy found to the East and was not founded at the mouth of flowing river. Without this energy, Brockville's early industries were limited. It did however develop waterfront port facilities for shipping and ship building. With the introduction of the railway in the mid 19th century, the port facilities' access to the St. Lawrence River made it an ideal lumber port for the Ottawa Valley. Brockville became the site of Canada's first railway tunnel in 1863 when a rail tunnel was constructed beneath the city to link the waterfront port with the northern railway.[84] Following the St. Lawrence Seaway Project, the port facilities declined with post-industrialization in the second half of the 20th century. Located a distance upriver from the site of the 'beneficial demolitions' of the Seaway Project, Brockville was not flooded during the Seaway Project. This has resulted in the preservation of a historic downtown adjacent to the St. Lawrence River. Brockville is considered the eastern entrance to the Thousand Islands, and their city motto reflects this, "City of the 1000 Islands". Tourism plays an important role within the community as the historic city centre did not suffer the beneficial demolitions of the SLS&PP, and the waterfront provides access to the 1000 Islands and Lake Ontario beyond.

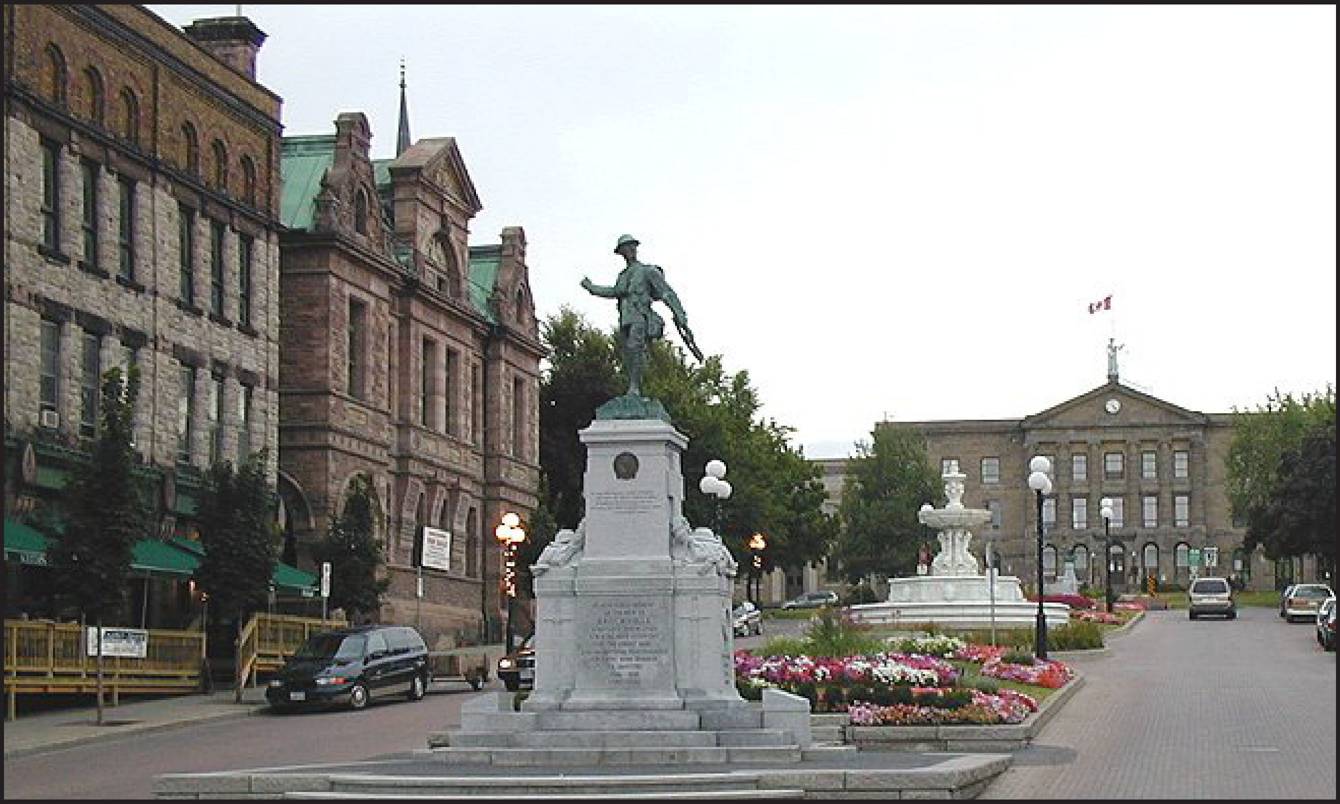
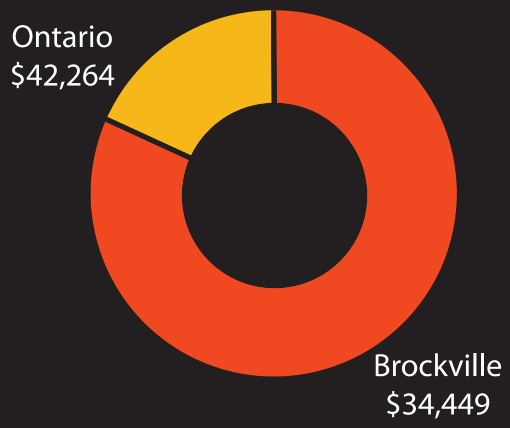


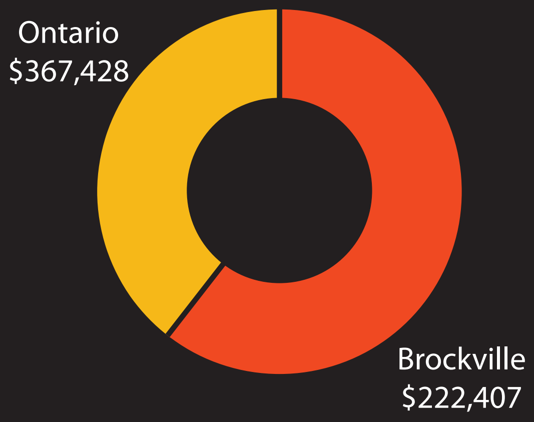
Figure 72: Brockville downtown.

Figure 73: Brockville, Ontario.

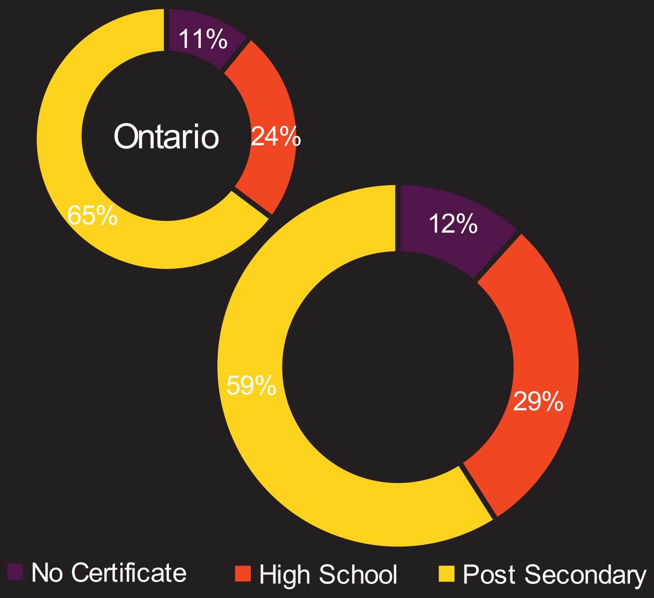
AVERAGE INCOME



AVERAGE DWELLING VALUE



EDUCATION LEVEL



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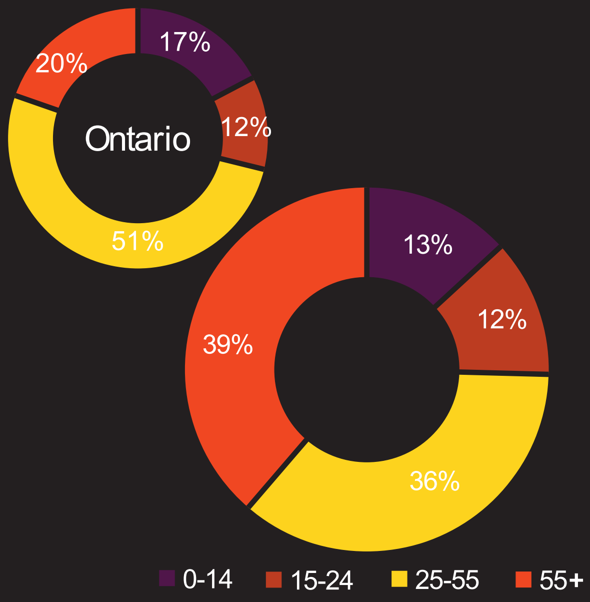
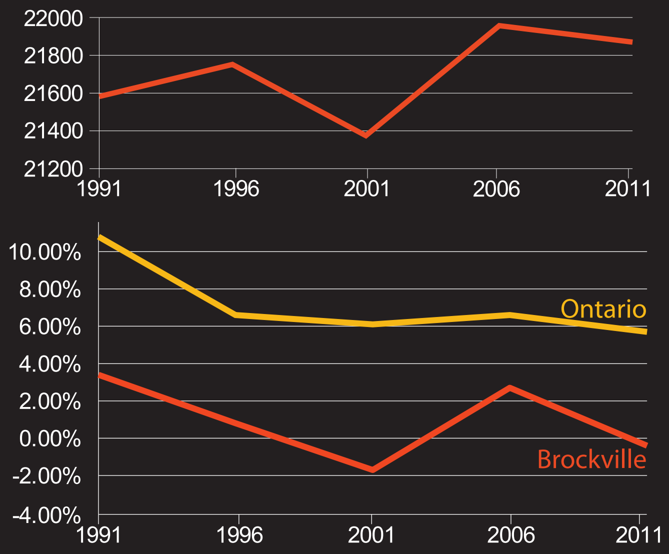


POPULATION TRANSITIONS



DENSITY & EMPLOYMENT

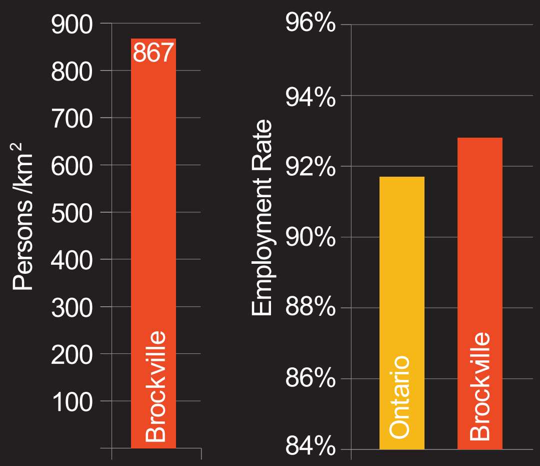


Figure 74: Brockville data

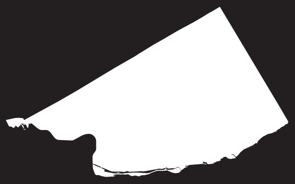
Brockville

In the 2011 census, Brockville had a population of 21,870.[85] Since 1991, Brockville's population saw a low of 21,375 in 2001, followed by a population high of 21,957 in 2006.[86] Since 1996, Ontario's population growth has remained at a steady 6%, while Brockville saw a population change of -1.7% in 2001, followed by an increase of +2.7% in 2006. Between 2006 and 2001, Brockville's population changed by a further -0.4%. The town has an urban density of 867 people per square km.

The population of Brockville in 2011 was made up of the following age groups: 55+ made up 39%, 25-55 made up 36%, 15-24 accounted for 12%, and 0-14 made up 13%. In Ontario, 64.7% of the population has some form of post-secondary education, 24.2% has a high school education, while only 10.9% has failed to complete high school. The educational background of the citizenry of Brockville indicates that 59% of the population has some form of post-secondary education, 29% with only a high school diploma, and 12% who did not complete high school. Ontario's unemployment rate is 8.3% while Brockville has an unemployment rate of 7.2%.

The average income across Ontario is $42,264. Brockville has a higher employment rate than the provincial average, but the average income in Brockville is $34,499.[87] The average income in Brockville is therefore 81.6% of the provincial average. This figure is slightly offset in the greater cost of living by the fact that the Ontario provincial average value of a dwelling is $367,428 while in Brockville the average dwelling is valued at $222,407, a difference of $145,021.

Prescott, Ontario
Population 4,284
Est. 1787



City of Cornwall
77.7 km^2

Town of Prescott
4.95 km^2

Prescott, Ontario is a town located almost in the centre of the SLRIBS. Located 358 km east of Toronto, and 187 km west of Montreal, Prescott historically was the site of Wellington National Historic Site, the Fort Wellington.[88] Fort Wellington was a strategic British Fort at the head of the St. Lawrence River rapids. With the decline of hostilities between British North America and the United States in the first half of the 19th century, Prescott's location made it an ideal location for port facilities as ships from Lake Ontario would transfer their cargo to smaller ships that utilized the St. Lawrence River canal system. The Port of Prescott is still an important piece of infrastructure and is one of the few sites along the St. Lawrence River that has seen new industrial development and investment in the past decade with the construction of an ethanol refinery converting corn to fuel.

Figure 75: Prescott waterfront.

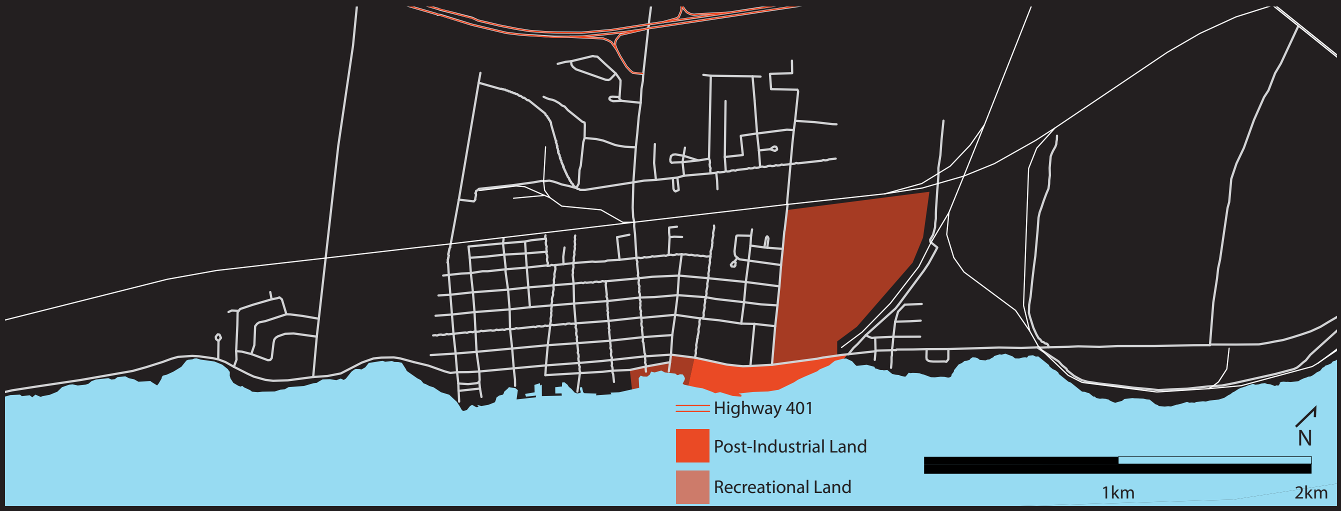
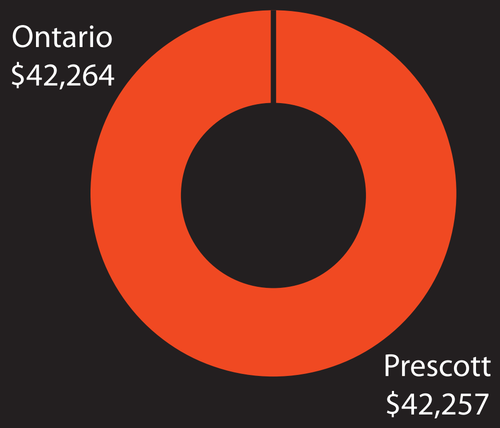
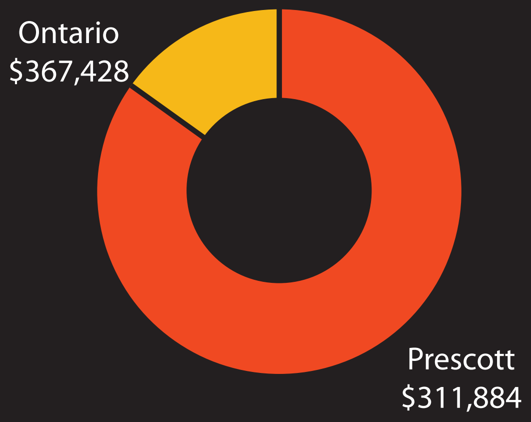


Figure 76: Prescott, Ontario.

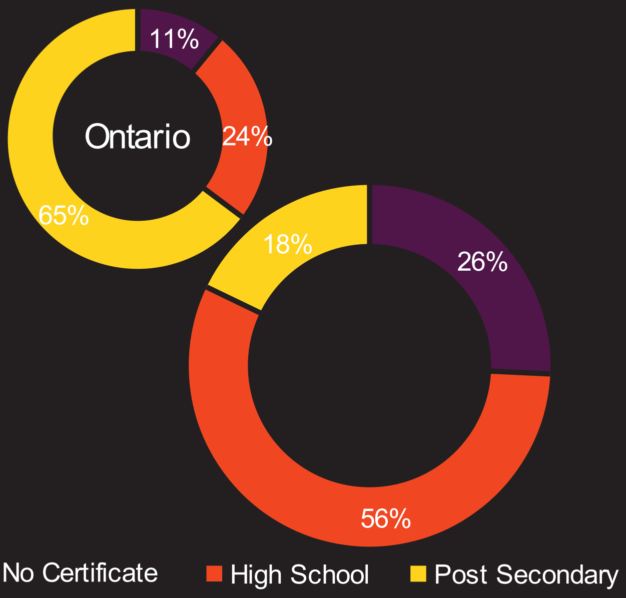
AVERAGE INCOME



AVERAGE DWELLING VALUE



EDUCATION LEVEL



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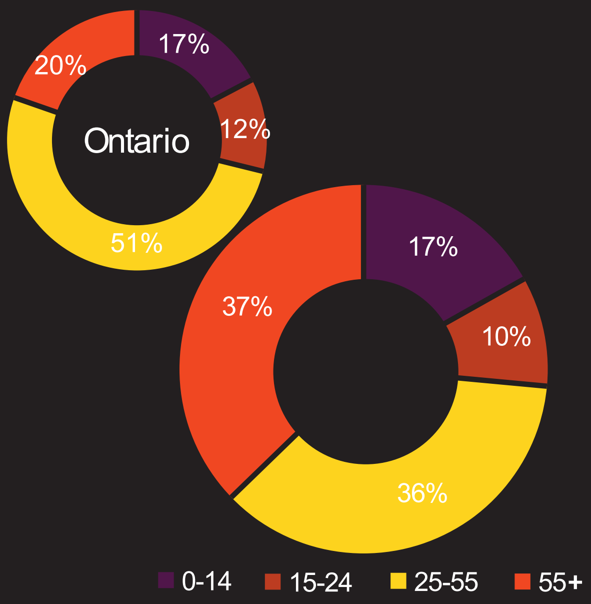
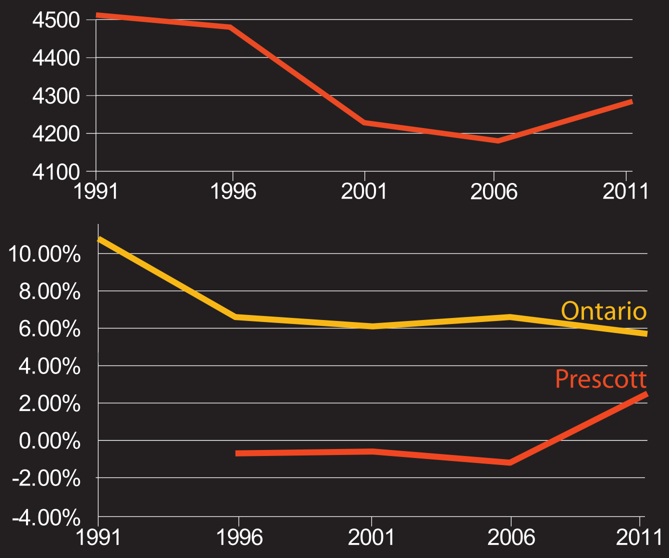


POPULATION TRANSITIONS



DENSITY & EMPLOYMENT

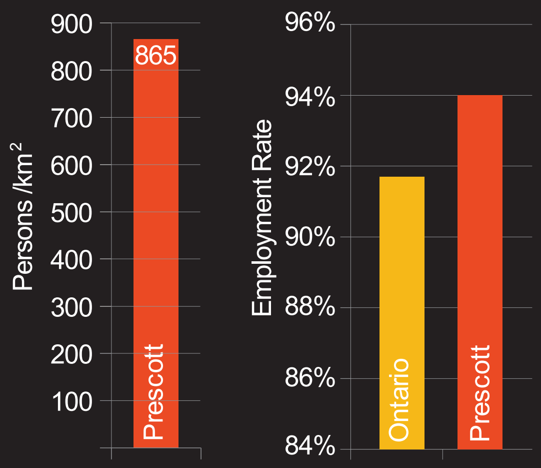


Figure 77: Prescott data.

Prescott

In the 2011 census, Prescott had a population of 4,284. [89] Since 1991, Prescott has seen a population high of 4,580 in 1991, reaching a population low of 4,180 in 2006. [90] Since 1996, Ontario's population growth has remained at a steady 6%, while Prescott's population change saw consistent negative growth reaching -1.2% in 2006, followed in 2011 by a population surge of 2.5%. The town has an urban density of 865 people per square km.

The population of Prescott in 2011 was made up of the following age groups: 55+ made up 37%, 25-55 made up 36%, 15-24 accounted for 10%, and 0-14 made up 17%. In Ontario, 64.7% of the population has some form of post-secondary education, 24.2% has a high school education, while only 10.9% have failed to complete high school. In Prescott, 18% of the population has some form of post-secondary education, 56% with only a high school diploma, and 26% did not complete high school. Ontario's unemployment rate is 8.3% while Prescott has an unemployment rate of 6%.

The average income across Ontario is $42,264. Prescott has a higher employment rate than the provincial average, and the average income in Prescott is $42.257[91], just $7 short of the provincial average. This figure marks the highest average income of the five surveyed Canadian cities along the St. Lawrence River international border segment. This income amount is compounded in the greater cost of living by the fact that the Ontario provincial average value of a dwelling is $367,428 while in Prescott the average dwelling is valued at $311,884, a difference of $55,544. Prescott's average value of dwelling is also the highest out of the total seven communities.

Figure 78: Port of Prescott, 2013, Ethanol Plant in rear.

The port facilities at Prescott predate the St. Lawrence Seaway, but have been undergoing a multiple phase upgrade since 2011 by the Government of Canada at a cost of $35 million.[92] The massive industrial corridor envisioned in the 1950s along the shores of the St. Lawrence never materialized, but the Port of Prescott has been resilient. The Port of Prescott handles and receives the majority of rock salt for the winter months' road maintenance for the entire metropolitan area of Ottawa. The historic grain elevators from the St. Lawrence River canal period also remain and are heavily used, with a capacity of 170,000 tonnes.[93] The port benefits from having a direct connection to the Canadian National Railways and is a short five minute connection to Highway 401. The infrastructural investment embodied within the St. Lawrence Seaway continues to pay unforeseen dividends. With land reserved around the port since the 1950s for industry that never manifested, opportunity was found by Greenfield Energy who constructed an ethanol plant in 2008.[94] Located directly adjacent to the Port of Prescott, the Greenfield Energy ethanol plant consumes 20 million bushels of corn[95] (equivalent to 704,000,000 litres) per year, much of it arriving by Seaway vessels. This project was subsidized by the Government of Canada at a cost of $15 million and created full time employment for 46 people.[96] While the St. Lawrence Seaway is operating at only 55% of utilization, the Port of Prescott is at its busiest level in the past quarter-century.[97]

Ogdensburg, New York
Population 11,128
Est. 1749

City of Cornwall
77.7 km^2

City of Ogdensburg
21.1 km^2

Ogdensburg, New York is a city located almost in the centre of the St. Lawrence River international border segment on the southern US shore. Ogdensburg is directly across the river from the town of Prescott. Located 355 km east of Toronto, and 190 km west of Montreal, Ogdensburg is the northern-most US port in New York State. The town site of Ogdensburg was a native village site for hundreds of years, if not a millennium, prior to European establishment of a French mission in 1749.[98] The site of military engagements between the English and the French, Ogdensburg would be under British control from 1760-1796, when the Jay Treaty between Britain and the United States made the southern shore of the St. Lawrence River between Lake Ontario and Cornwall part of American territory.[99] Ogdensburg was recaptured by British forces during the war of 1812 to end a naval blockade on the St. Lawrence River. Like Brockville and Prescott, Ogdensburg lacked hydrological energy, but emerged as an important port along the river. Connecting the southern St. Lawrence River shore with railways in upstate New York, Ogdensburg continues to be an important port along the St. Lawrence River.

Figure 79: Ogdensburg downtown.

Figure 80: Ogdensburg, New York State.

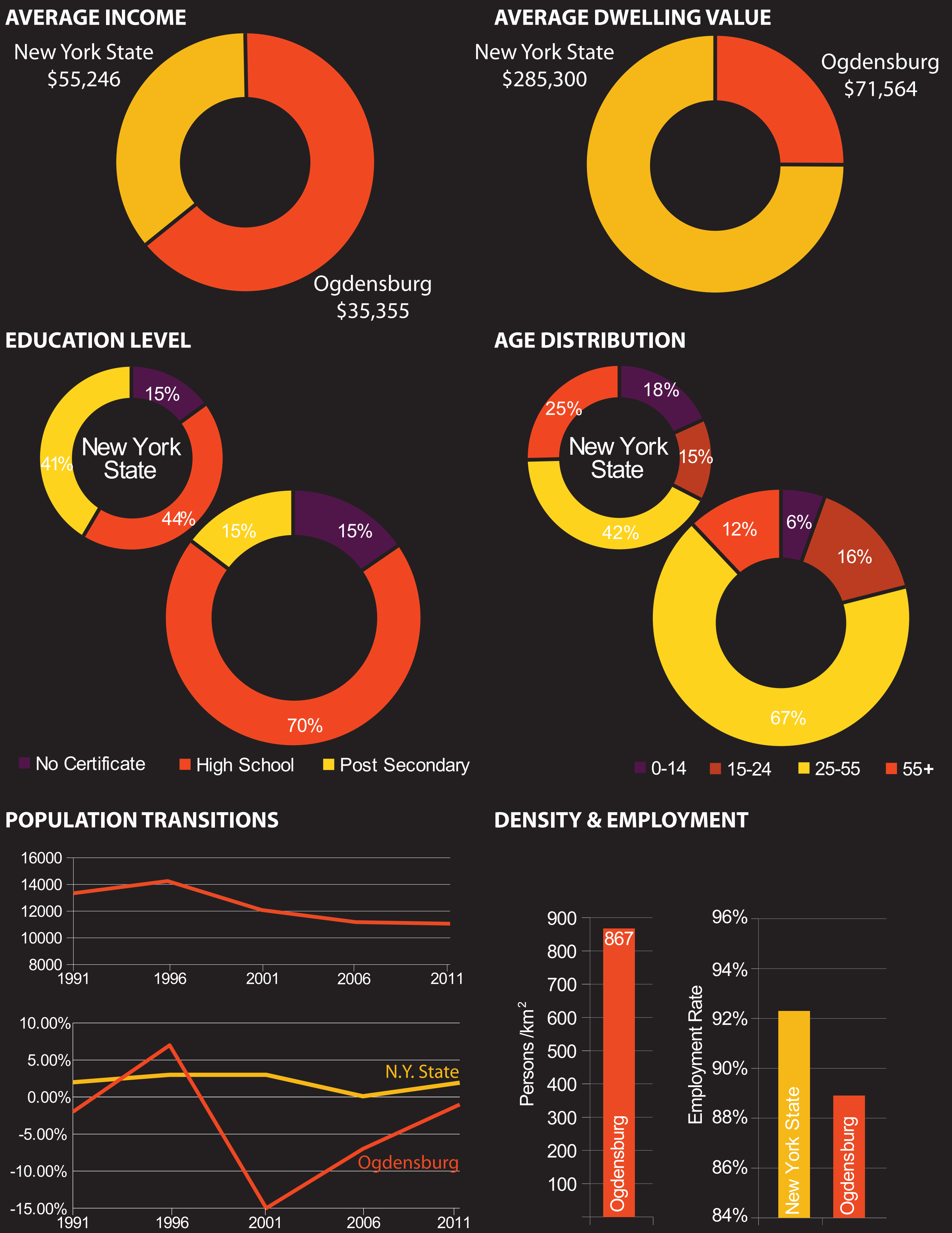


Figure 81: Ogdensburg data.

Ogdensburg

Ogdensburg is an American city in Upstate New York, located directly across the river from Prescott. Exactly like Prescott, prior to the construction of the St. Lawrence Seaway & Power Project, Ogdensburg was the farthest eastern US port for Great Lake freighters that could not fit through the existing Canadian canal system. In the 2011 US census, Ogdensburg had a population of 11,056.[100] Since 1991, Ogdensburg has seen a population high of 14,256 in 1996, and the current low is the 2011 population of 11,056. Since 2001, New York State's population growth has remained hovering between 2-3% annually, with the exception of 2006 when the population stalled at 0.1%. Ogdensburg population growth has been unsteady. In 1996 the population increased by 7%, while 2001 saw a decrease of -15%, followed by another -7% in 2006. The 2001 census saw a further decrease of -1%. The city has an urban density of 867 people per square km.

The population of Ogdensburg in 2011 was made up of the following age groups: 55+ made up 12%, 25-55 made up another 67%, 15-24 accounted for 16%, and 0-14 made up 6%. In New York State, 41.3% of the population has some form of post-secondary education, 43.9% has a high school education, while only 15% has failed to complete high school. The educational background of the citizenry has 14.7% of the population having some form of post-secondary education, 69.9% with only a high school diploma, and 15.4% who did not complete high school. New York State's unemployment rate is 7.7% while Ogdensburg has an unemployment rate of 11.1%.

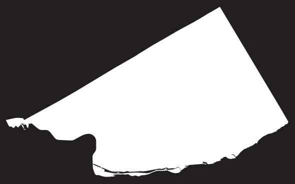
The average income across New York State is $55,246. Ogdensburg has a higher

Figure 82: Port of Ogdensburg, 2013.

unemployment rate than the state average, but the average income in Ogdensburg is $35,355. The average income in Ogdensburg is therefore 63.9% of the state average. This is the largest discrepancy in income out of all the towns and cities along the SLRIBS. This figure is slightly offset in the greater cost of living by the fact that the New York State average value of a dwelling is $285,300 while in Ogdensburg the average dwelling is valued at $71,564, a difference of $213,736. This figure represents the highest discrepancy in dwelling value of the two American communities along the south shore of the St. Lawrence River international border segment and is the largest discrepancy overall.

The Port of Ogdensburg located directly across the river from the port of Prescott is New York State's most northern port. Additionally, the Port of Ogdensburg is New York State's shortest shipping route to Northern Europe. In the past decade, the Port of Ogdensburg has emerged as one of the most experienced and busiest ports handling windmill components in the world. Like the Port of Prescott, the Port of Ogdensburg also handles rock salt for much of Upstate New York.

Morrisburg, Ontario
Population 11,128
Est. 1834



City of Cornwall
77.7 km^2

Town of Morrisburg
6.41 km^2

Morrisburg, Ontario is a town on the northern shore of the St. Lawrence River. Morrisburg is located 392 km east of Toronto, and 153 km west of Montreal, and 80 km directly south of Ottawa. In fact, Ottawa's historic Bank Street turns into Highway 31 and terminates on the Morrisburg waterfront. Morrisburg was the downriver entry point of the Williamsburg Canal on the St. Lawrence River, constructed in 1843.[101] The canal furnished safe river transport up and down the St. Lawrence River, and made an ideal site for earlier water powered industries. Similar to the village of Iroquois in the introduction, Morrisburg's location on the rapids of the St. Lawrence River made it the site of 'beneficial demolitions' during the Seaway Project. Unlike the fully demolished village of Iroquois, one third of the historic Morrisburg was demolished and flooded. This included the historic commercial downtown along the river.[102] The OHEC planners replaced the historic waterfront downtown with a highway adjacent strip mall. No longer the site of industry, the past decade has seen Morrisburg begin to emerge as a retirement community for baby boomers along the shores of the St. Lawrence River.

Figure 83: Post-Seaway Morrisburg shopping plaza.

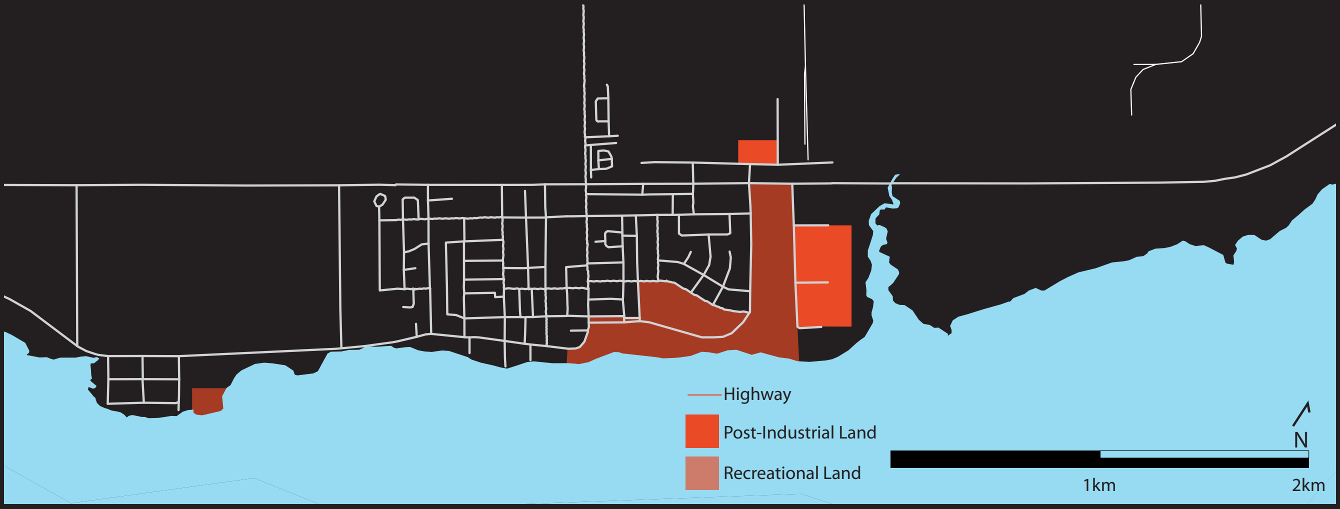
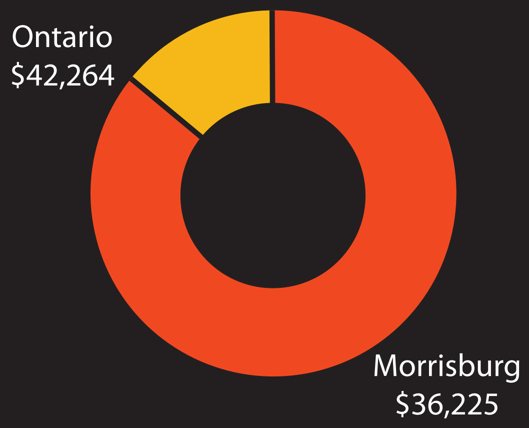
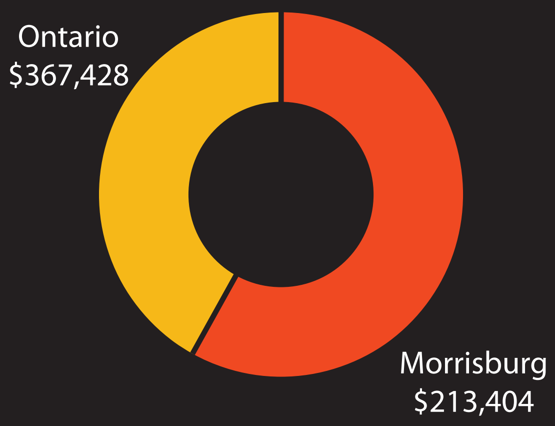


Figure 84: Morrisburg, Ontario.

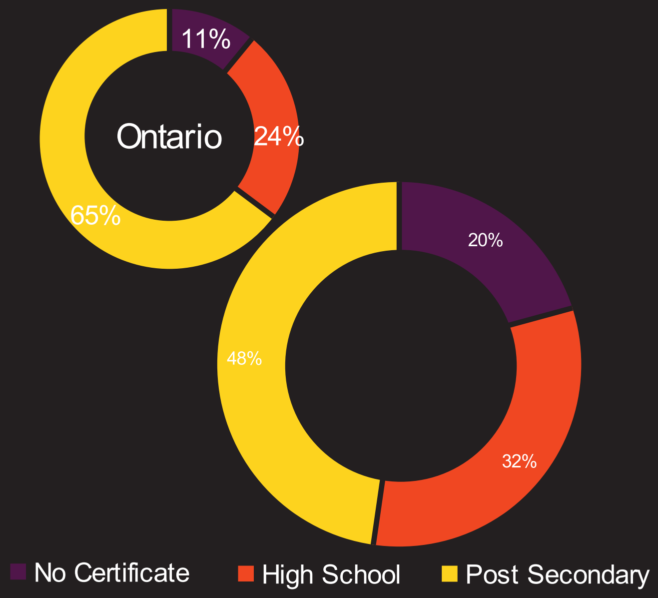
AVERAGE INCOME



AVERAGE DWELLING VALUE



EDUCATION LEVEL



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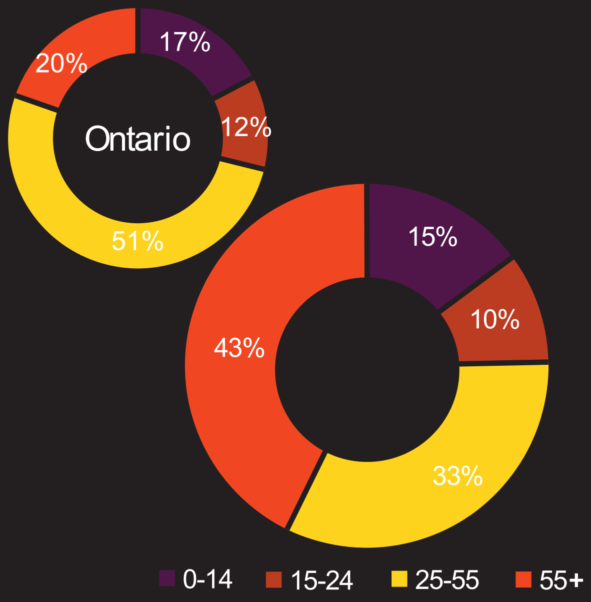
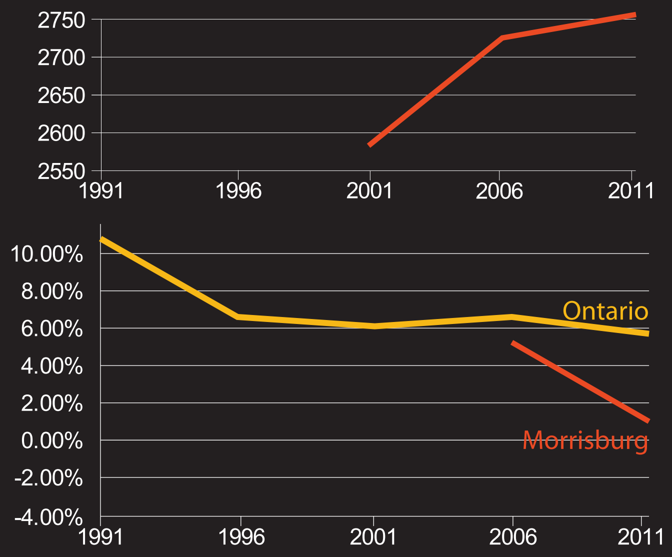


POPULATION TRANSITIONS



DENSITY & EMPLOYMENT

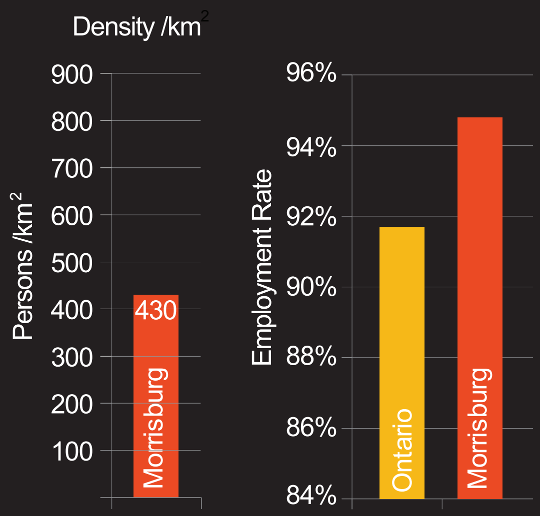


Figure 85: Morrisburg data.

Morrisburg

Morrisburg is a Canadian town located 50 kms east of Brockville, and 40 kms west of Cornwall. Morrisburg is located at the southern termination of Ottawa's bank street, the main street of Canada's capital, on the shores of the St. Lawrence River international border segment. In the 2011 census, Morrisburg had a population of 2,756.[103] In 2001 Morrisburg's population was at a low of 2,583, followed by an increase in population to 2,725 in 2006.[104] Since 1996, Ontario's population growth has remained at a steady 6%, while Morrisburg saw a population change of 5.5% in 2006, and a modest gain of 1% in 2011. The town has an urban density of 430 people per square km.

The population of Morrisburg in 2011 was made up of the following age groups: 55+ made up 43%, 25-55 made up another 33%, 15-24 accounted for 10%, and 0-14 made up 15%. In Ontario, 64.7% of the population has some form of post-secondary education, 24.2% has a high school education, while only 10.9% has failed to complete high school. In Morrisburg, 48% of the population has some form of post-secondary education, 32% has only a high school diploma, and 20% did not complete high school. Ontario's unemployment rate is 8.3% while Morrisburg has an unemployment rate of 5.2%.

The average income across Ontario is $42,264. Morrisburg has a higher employment rate than the provincial average, but the average income in Morrisburg is $36,225.[105] The average income in Morrisburg is therefore 85.7% of the provincial average. This figure is slightly offset in the greater cost of living by the fact that the Ontario provincial average value of a dwelling is $367,428 while in Morrisburg the average dwelling is valued at $213,404, a difference of $154,024.

Figure 86: Proposed redevelopment for Port of Morrisburg.

The Port of Morrisburg has been derelict for the past quarter-century as the Seaway dream of heavy industrialization failed to arrive, and existing industries began to decline. Once home to a large petrol tank farm, the site is empty today with only the port infrastructure remaining. A combination of available land and existing port infrastructure has attracted the attention of Rideau Bulk, a bulk commodity shipper. Rideau Bulk is in the process of investing in the site to reactivate the port, proposing massive corn storage silos and subsequent loading facilities.[106] As the site has been empty for so long, residential development has occurred all around the Port of Morrisburg, and the local residents are opposing the port's redevelopment.[107] The redevelopment scheme calls for the construction of two 20,000 tonnes corn silos, that are each 90 ft tall.[108] There is an option for an additional two silos if there is demand.[109]

Massena, New York

Population 12,883

Est. 1792

City of Cornwall
77.7 km^2

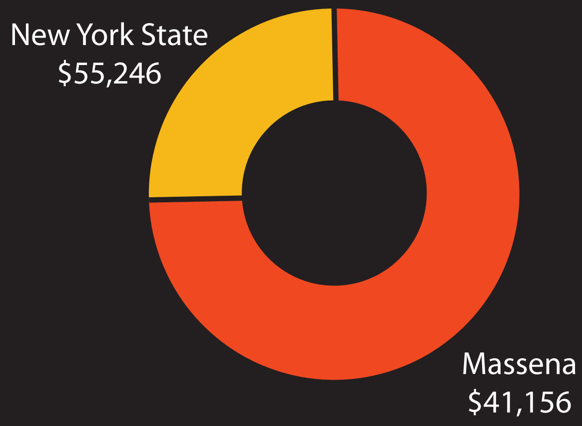
Town of Massena
11.7 km^2

Massena, New York is a town on the US side of the St. Lawrence River. From the northern shore, Massena is located 420 km east of Toronto, 136 km west of Montreal, and 582 km north of New York City, making it New York State's northern-most town. Massena is located at the confluence of several rivers and the St. Lawrence River. Settled in 1792 by French lumberjacks, Massena emerged early on as a logging centre.[110] Following the logging industry, American settlers further developed the town site. Early on, the river systems were obstacles to development, until bridges would eventually be constructed. By the 20th century, Massena's hydrological energy had been harnessed via hydro-electrical dams and major heavy industry was established with the likes of The Aluminium Company of America (Alcoa), and General Motors. Massena has not been spared by the North American industrial decline of the last half of the 20th century. General Motors closed in 2009, and by 2014 Alcoa had decommissioned two thirds of its operations.[111]

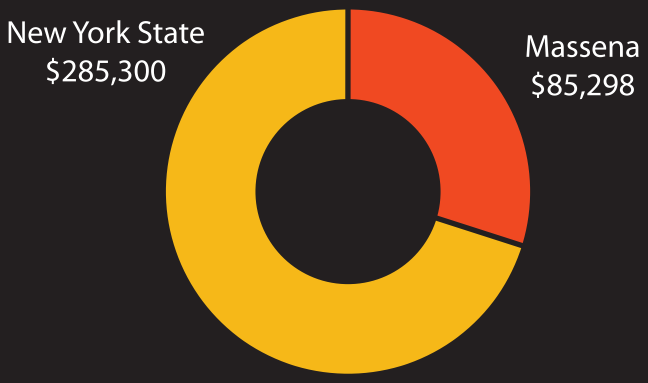
Figure 87: Massena downtown.

Figure 88: Massena, New York State.

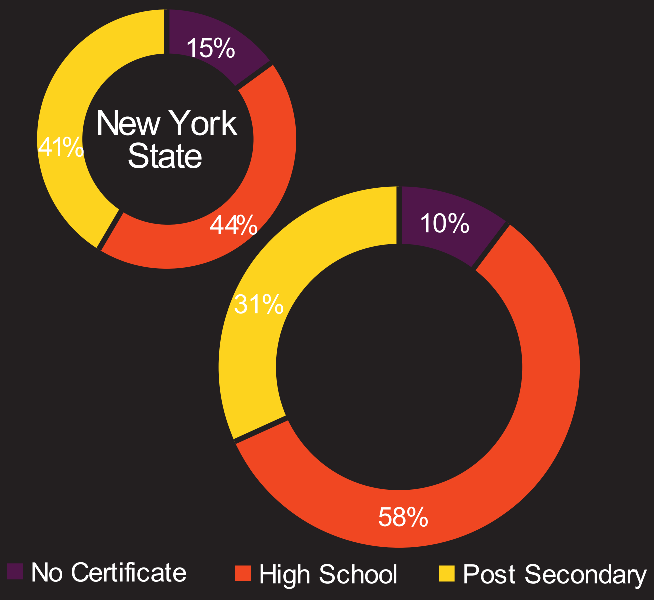
AVERAGE INCOME



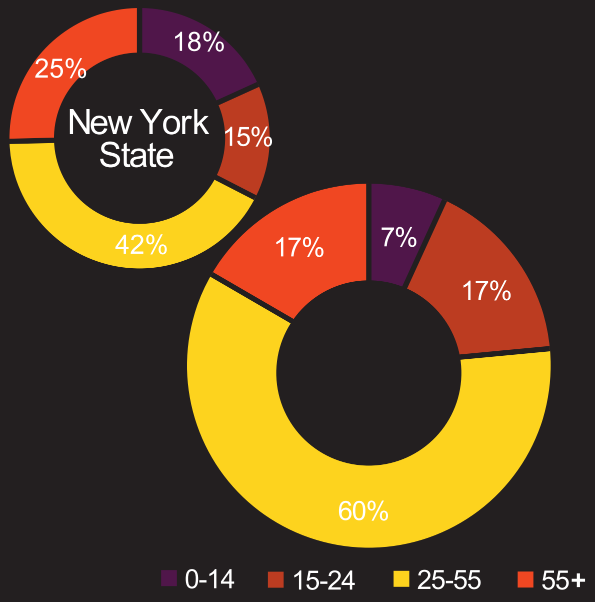
AVERAGE DWELLING VALUE



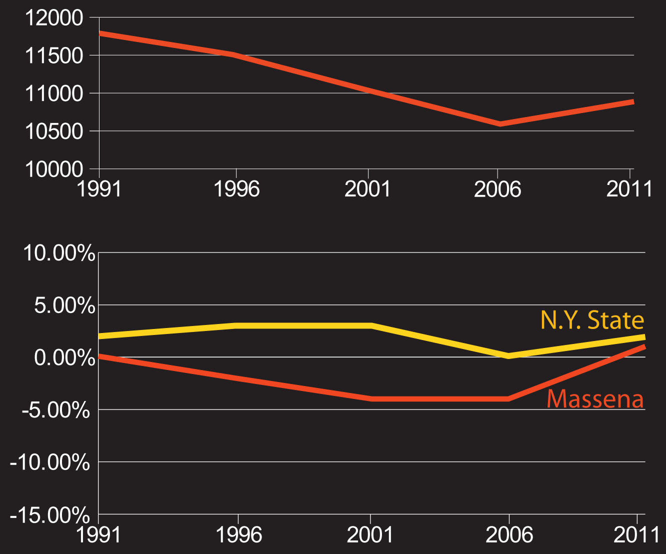
EDUCATION LEVEL



AGE DISTRIBUTION



POPULATION TRANSITIONS



DENSITY & EMPLOYMENT

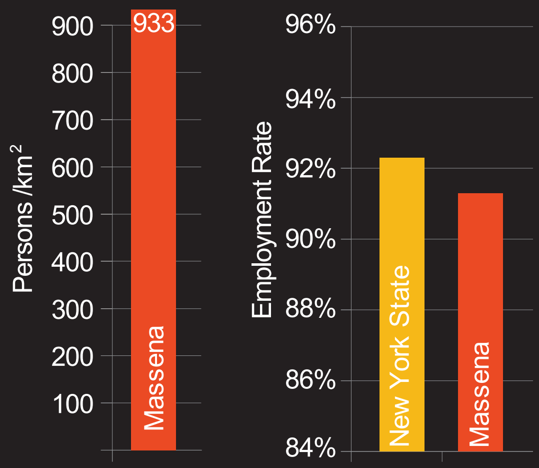


Figure 89: Massena data.

Massena

Massena is an American town located at the very east end of the St. Lawrence River international border segment. In the 2011 census, Massena had a population of 10,887.[112] Since 1991, Massena's population has seen a low of 10,590 in 2006, and a population high of 11,789 in 1991.[113] Since 2001, New York State's population growth has remained hovering between 2-3% annually, with the exception of 2006 when the population stalled at 0.1%, while Massena's population changed -2% in 1996, -4% in both 2001 and 2006, followed by small growth in 2011 of 1%. The town has an urban density of 933 people per square km.

The population of Massena in 2011 was made up of the following age groups: 55+ made up 17%, 25-55 made up another 60%, 15-24 accounted for 17%, and 0-14 made up 7%. In New York State, 41.3% of the population has some form of post-secondary education, 43.9% has a high school education, while only 15% has failed to complete high school. The educational background for Massena has 31.8% of the population having some form of post-secondary education, 58% with only a high school diploma, and 10.3% who did not complete high school. New York State's unemployment rate is 7.7% while Massena has an unemployment rate of 8.7%.

The average income across New York State is $55,246. Massena has a lower employment rate than the state average, and the average income in Massena is $41,156. The average income in Massena is therefore 74.5% of the provincial average. This figure is slightly offset in the greater cost of living by the fact that the New York State average value of a dwelling is $285,300 while in Massena the average dwelling

Figure 90: Future Port of Massena in 1957, during Seaway Construction.

is valued at $85,298, a difference of $200,002.

The former Port of Massena was located directly adjacent to the town's industrial park. Like the Port of Morrisburg, the Port of Massena historically was a petrol terminal tank farm, but has been decommissioned and is vacant. The port facilities themselves, including moors and docks, have been removed. The complete removal of infrastructure has not hampered discussions by industrialists of reopening the port facility. In 2012, the State of New York launched a $360,000 brownfield redevelopment study plan that included looking at reopening the port.[114] This study is ongoing and has not been made public.

Cornwall, Ontario
Population 46,340
Est. 1784

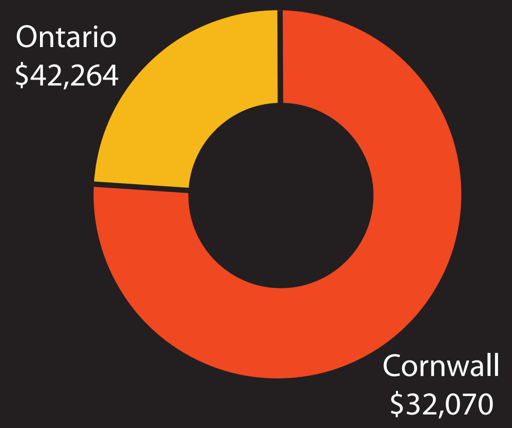
City of Cornwall
77.7 km^2

Cornwall, Ontario is a Canadian city located 430 km east of Toronto and 110 km west of Montreal. Cornwall is Ontario's eastern most city, and is located at the junction of the Ontario-Quebec border, and the Canada-US border. Settled in 1784 by United Empire Loyalists, Cornwall is one of Ontario's oldest cities. The town was settled at the foot of the Long Sault Rapids on the St. Lawrence River, upriver from Montreal. In the first half of the 19th century, the Cornwall Canal created a sheltered route for vessels ascending and descending the river. Cornwall was home to many mills and factories during industrialization. During the Seaway Project, Cornwall was the centre of activity, and was given the promising title of 'The Seaway City.' Clearly deindustrializing, and clearly post-Seaway, Cornwall has been at the centre of the post-Seaway reality that was facing the entire region for most of the second half of the 20th century. A decade and a half into the 21st century, it is Cornwall that is demonstrating a successful economic transition from manufacturing to the service industry.

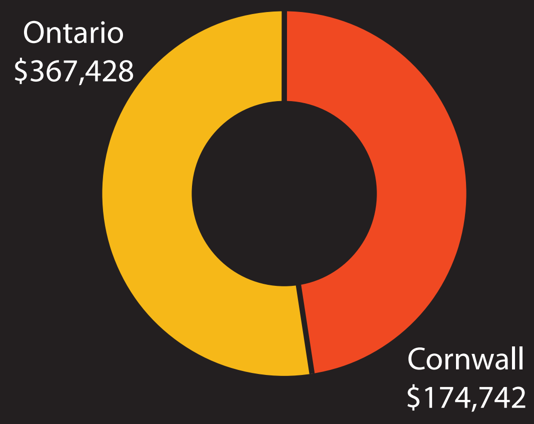
Figure 91: Cornwall downtown.

Figure 92: Cornwal, Ontario.

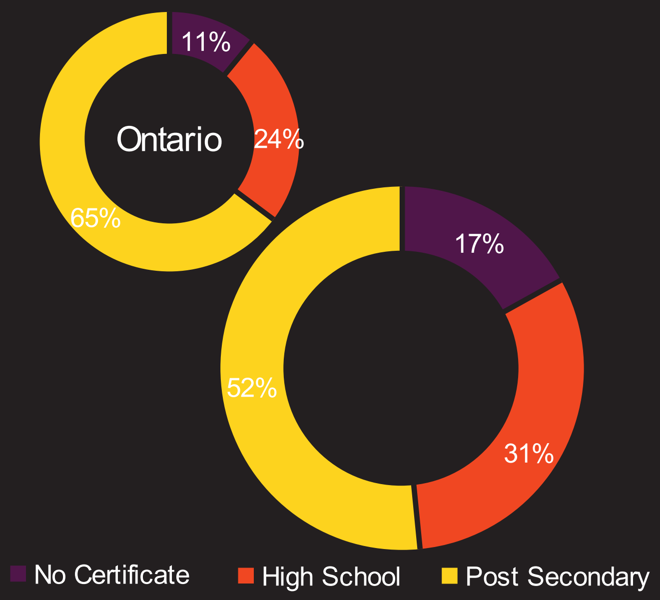
AVERAGE INCOME



AVERAGE DWELLING VALUE



EDUCATION LEVEL



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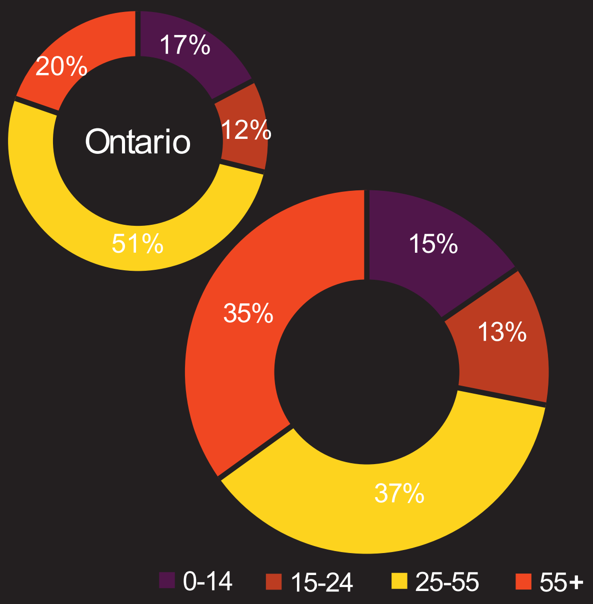
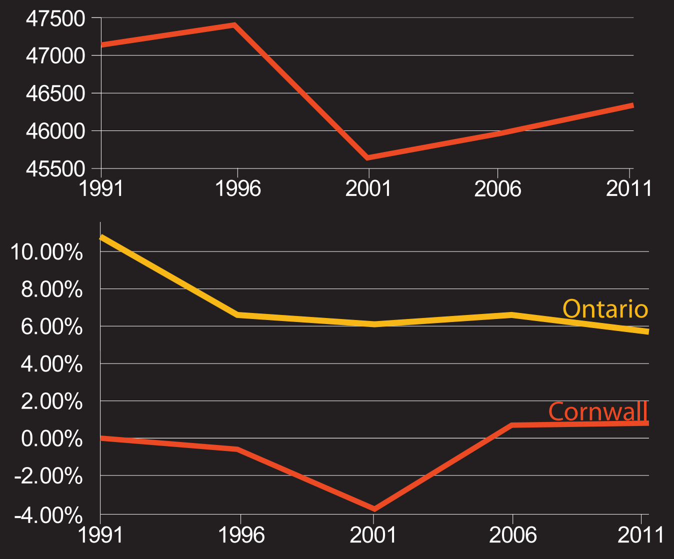


POPULATION TRANSITIONS



DENSITY & EMPLOYMENT

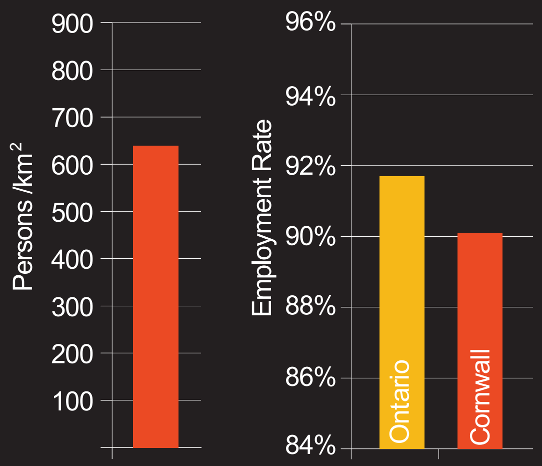


Figure 93: Cornwall data.

Cornwall

In the 2011 census, Cornwall had a population of 46,340.[115] Since 1991, Cornwall has seen a population high of 47,403 in 1996, followed by a population low of 45,640 in 2001.[116] Since 1996, Ontario's population growth has remained at a steady 6%, while Cornwall saw a population change of -3.8% in 2001, followed by subtle growth of 0.7% in 2006, and 0.8% in 2011. The town has an urban density of 639 people per square km.

The population of Cornwall in 2011 was made up of the following age groups: 55+ made up 35%, 25-55 made up another 37%, 15-24 accounted for 13%, and 0-14 made up 15%. In Ontario, 64.7% of the population has some form of post-secondary education, 24.2% has a high school education, while only 10.9% has failed to complete high school. In Cornwall, the educational background of the population has 52% of the population having some form of post-secondary education, 31% with only a high school diploma, and 17% who did not complete high school. Ontario's unemployment rate is 8.3% while Cornwall has an unemployment rate of 9.9%.

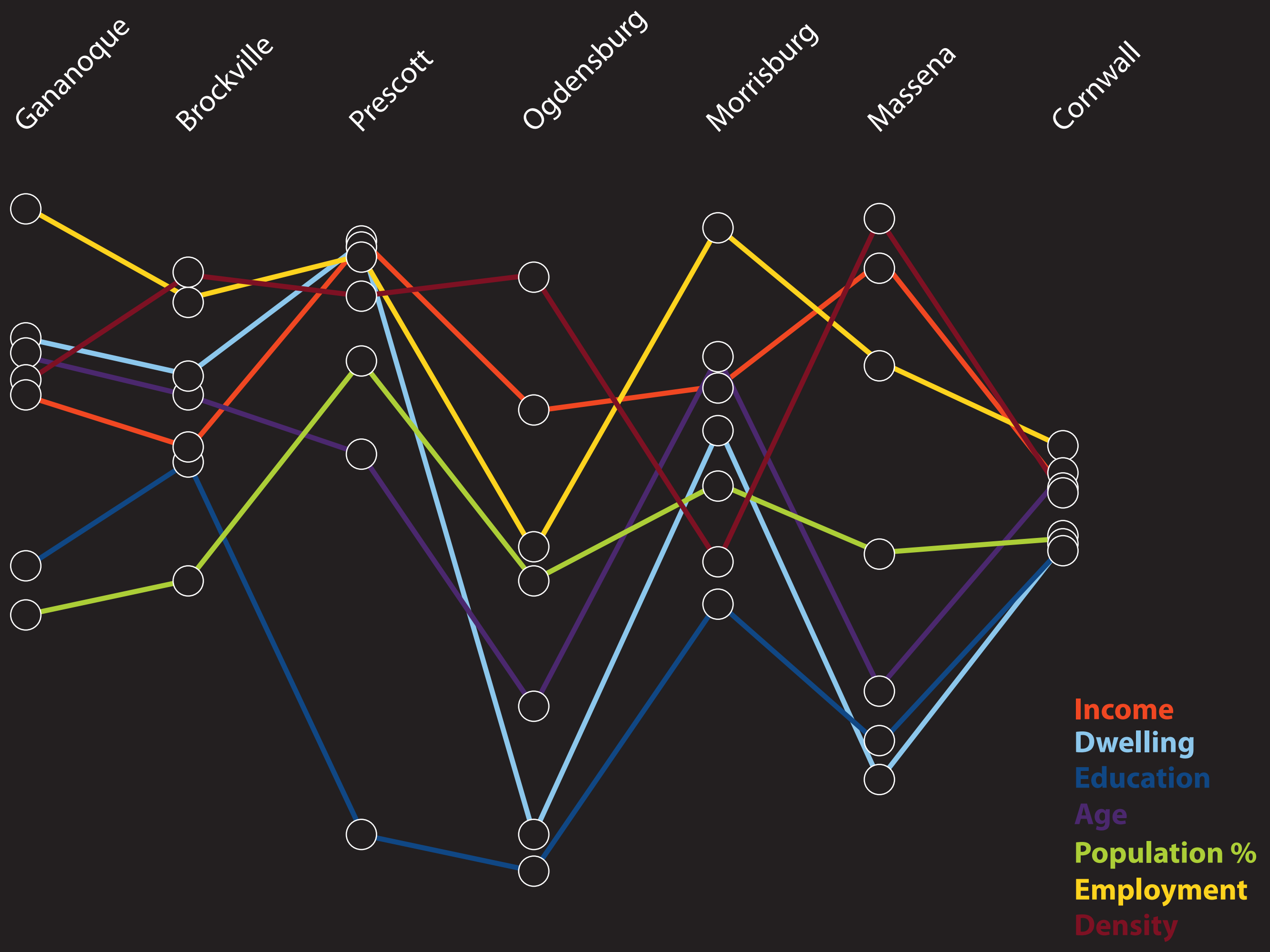
The average income across Ontario is $42,264. Cornwall has a higher unemployment rate than the provincial average, and the average income in Cornwall is $32,070.1.[117] The average income in Cornwall is therefore 75.8% of the provincial average. This figure represents the highest discrepancy in average income of the five Canadian towns and cities along the south shore of the St. Lawrence River international border segment and is the largest discrepancy overall. This figure is slightly offset in the greater cost of living by the fact that the Ontario provincial average value of a dwelling is $367,428 while in Cornwall the average dwelling is valued at $174,472,

Figure 94: Cornwall harbour, 2014

a difference of $192,956. This figure represents the highest discrepancy in dwelling value of the five Canadian towns and cities along the north shore of the St. Lawrence River international border segment.

The Port of Cornwall, like the derelict ports in Morrisburg and Massena, saw ever decreasing use since the completion of the St. Lawrence Seaway. As industries left Cornwall, the port was used less and less. The Port of Cornwall was home to a petrol tank farm owned by Universal Terminals, but the site was decommissioned in the late 1990s, and was cleaned up by the Federal Government in the early 2000s.[118]

Despite public investments into remediation, the Federal Government viewed the Port of Cornwall as an economic vehicle, and in December 2013, returned the port to industrial use. Industrial capital was attracted by the favorable economic conditions, and new chemical tanks were constructed on remediated land. Recent residential developments along the waterfront are now once again adjacent to industry. Despite public opposition, and political pandering, the industrial project went ahead. For local residents, it was a reminder of the powerless role of the citizens along the Seaway. Commerce and industry have position and power, local residents do not. The post-Seaway rise of a tourism and recreational focus on the historic Port of Cornwall are now uncertain.


Gananoque
Brockville
Prescott
Ogdensburg
Morrisburg
Massena
Cornwall
Income
Dwelling
Education
Age
Population %
Employment
Density

Results & Discoveries

When these data sets are combined and overlaid, patterns begin to emerge. The American communities of Ogdensburg and Massena experience the lowest dwelling value throughout the region. This is mirrored by the lowest and third lowest level of education, but these communities also have the lowest average age of citizens along the SLRIBS. The Canadian community of Prescott, located in the centre of the SLRIBS, has the highest dwelling value, and not surprisingly also has the highest income level. Subsequently Prescott also has the highest percentage of population change, supporting the theory of supply and demand in regards to dwelling value. Oddly, Prescott also has the lowest education level among the Canadian communities of the SLRIBS. The majority of the communities are hovering between -1% and +1% population change, with the exceptions of Morrsiburg and Prescott. Gananoque and Morrisburg, despite their small size, have the highest employment rate, while urban centres with larger populations, such as Ogdensburg and Cornwall, have the lowest employment rate. Morrisburg and Gananoque also have the oldest population, reflective of their emergence as retirement and leisure communities. A striking set of data that leaps from the page is the fact that the communities planned and designed by the OHEC during the Seaway Project, Morrsiburg and Cornwall, have the lowest population density, as a result of the beneficial demolitions and amalgamations.

Remarkably, The Seaway City, Cornwall, at the far eastern end of the SLRIBS, at the culmination of the Seaway Project, illustrates the mean of all demographic conditions. It does not experience a highest or lowest data point, save for income, but represents the average. Without the inclusion of the American communities of Ogdensburg and Massena, Cornwall also has the lowest dwelling value, reflective of the income situation. Regardless of income, Cornwall's average dwelling value appears unaffected by being the closest of these communities to the major Canadian population centres of Ottawa and Montreal.

The American communities along the SLRIBS suffer from the economic conditions of Upstate New York and their data sets reflect that. The exception to this is Massena's income level as the second highest, with education level being the third lowest. Prescott has an interesting data set, with primarily high figures with the exception of education level, which is unreflective of average income or dwelling value.

Cornwall's results were unexpected. It was not expected that the data points would converge reflective of the mean of the data sets as a whole. Cornwall has transitioned from the manufacturing sector to the service industry, but is not seeing a break out in any one data set. New capital investment from the emerging logistics sector have done little to improve income or dwelling levels, while education and employment rate remain problematic. Cornwall's stagnation and mean performance are indicative of the malaise it has experienced since the SLS&PP.

Reflections

Today, six decades after the completion of North America's largest inland waterway, maritime commerce on the Great Lakes Seaway System annually sustains more than 225,000 US and Canadian jobs.[119] With the exception of direct employment from operating the infrastructure, today the Seaway has minimal employment influence on the towns and cities along the St. Lawrence international border segment. The past half-century has seen these waterfront communities be defined by the lasting effects of the Seaway Project, and these communities' vitality over the next half-century is uncertain. Will these historic St. Lawrence towns and cities successfully transition to tomorrow, our will they continue to develop in a blasé type of way trying to achieve the historic dream of the Seaway Project?

The outcome for these towns and cities remains uncertain. The lasting effects of the St. Lawrence Seaway & Power Project on these communities is still recent history. The transition to tomorrow will be difficult. Some of these towns and cities are better suited than others to adjust to the new economic realities. It would be valuable to continue to track the demographic trends of these communities as they progress. Some may shrink, some may grow.

While the future of towns and cities along the SLRIBS is uncertain, this unique landscape contains many opportunities for the future. Substantial amounts of shoreline tracts of land were expropriated by the Federal Government, resulting today in much of the shoreline and islands of Lake St. Lawrence being held by Crown agencies. Six decades on, these formerly developed lands have begun to naturalize. The river itself has passed from its polluted period and is beginning to naturally restore itself. Additionally, the legacy of deindustrialization along the river has produced former waterfront industrial sites, brownfields. Some of these sites are simply decommissioned, while others are heavily polluted. The post-industrial Seaway landscape offers many sites as possible catalysts for something new.

The towns and cities of the St. Lawrence international border segment no longer rely on a connection to the St. Lawrence River for trade or transport. These communities are today linked by a much larger regional network, Highway 401. Yet these communities will always be linked to their primary artifact, the St. Lawrence River, the big waterway. The regional under-performance of these towns and cities creates opportunity on many fronts. The recent rise in utilization of the ports in Ogdensburg and Prescott illustrate the resilience of the Seaway to remain economically relevant even in the face of shifting economics in North America.

The shift towards redeveloping industrial port facilities in Morrisburg, Massena, and Cornwall highlight the economic advantage in these undertakings, in contrast to the ports in Montreal or the Great Lakes. Capital will always exploit these economic advantages. The recent rise in infrastructural port investments in the communities along the St. Lawrence international border segment is just beginning to occur as these towns and cities recognize themselves as post-industrial. Attempts at waterfront development have been met with reinvestment in infrastructure.

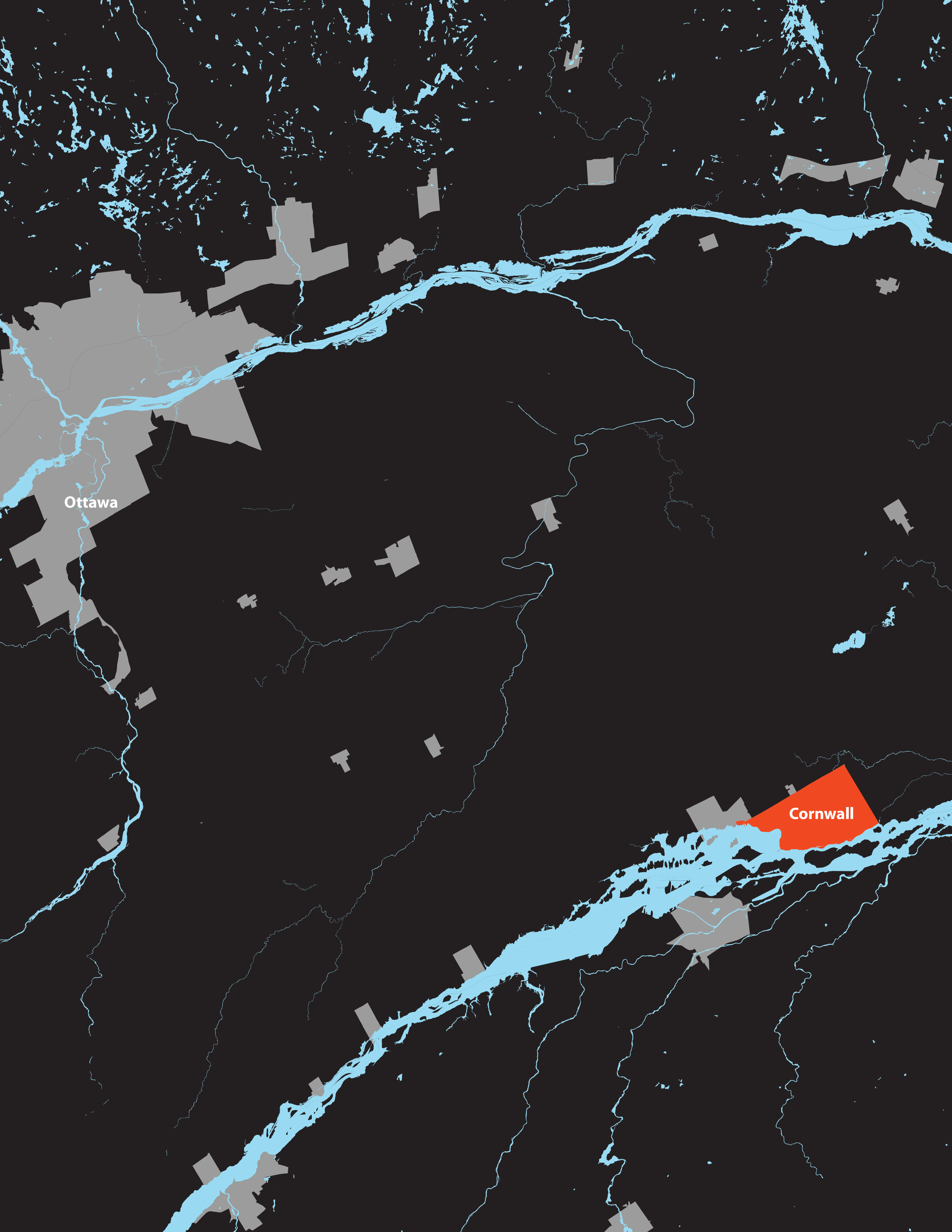
Cornwall immediately experienced the decline in industry following the completion of the Seaway Project. Decades of industrial decline and related social issues were experienced. The outcome has produced a population with low levels of education and a substandard employment rate. The average income in Cornwall is almost 25% less than the provincial average. The value of dwellings in Cornwall is the lowest among towns and cities examined, less than 50% of the provincial average, yet Cornwall is the closest community to Canada's second largest city, Montreal.

To move forward, the towns and cities along the St. Lawrence international border segment will have to have a hard look at their current condition. It is a region that is plagued with below standard levels of education, employment, and income. That is not to say that any one, or all of these issues are the direct solution to the problem. But they are indicative of problems in the civic landscape. The transition to tomorrow will require better education and employment.

One cannot be struck by the ongoing transition in the former Seaway City, Cornwall. Emerging as a service industry centre, the return of urban industrial use along the communities' waterfront creates concern. Is this community post-industrial if the power of industry holds all the cards? Being at the centre of the Seaway Project, the deindustrialization of the waterfront, the reemergence of industry, and the six decades of stagnated population, warrants further examination. The following case study will examine the architecture of the city, as it transitioned over time. This is required to inform the new design strategy. A new design strategy that seeks to restore civic elements lost during the Seaway Project. The drive and industriousness that built the first canals, and the optimism that planned and constructed the Seaway still persists, and it requires a new project. Accordingly, this time the focus will be on restoring the citizen's agency in making a better city.

Producing the Post-Industrial Post-Seaway City Cornwall

Figure 95: Cornwall Canal Lands, 2014


Ottawa
Cornwall

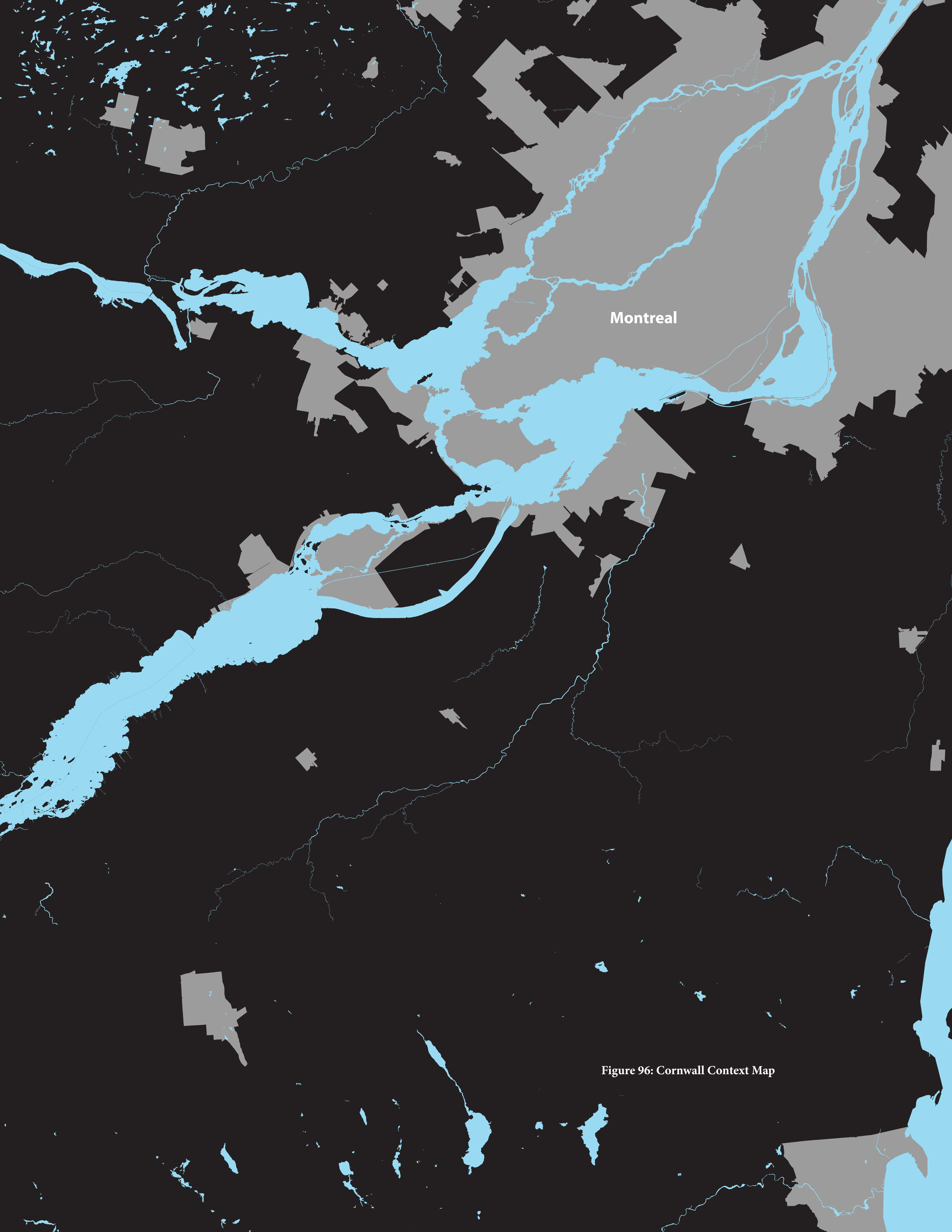


Figure 96: Cornwall Context Map

Figure 97: Simcoe Survey of Cornwall, 1790

Ontario Grid Towns

It is critical to understand the form of the city of Cornwall prior to the Seaway Project amalgamation of the city of Cornwall and Cornwall Township. This historic form of the city and the shoreline it manufactured is important to understand the community's relationship with the river. For early Ontario communities, the one square grid is a cultural artifact.

An attempt to standardize the size and design of the townships was made by the governor of Canada, Lord Dorchester, in 1789.[120] The plan was for a ten by ten mile township. Two standard plans were designed, one for an inland site, the other for waterfront settlements. Towns were made of a nine by nine block grid, covering a square mile surrounded by military reserve. The design put aside land for civic use and parks, and the remainder was for one acre town lots. In Cornwall, the Dorchester plan ordered designs for diagonal streets, but these plans were later abandoned.

Simcoe's designs for the earlier Ontario settlements mark a significant turn towards commerce and industry.[121] No longer envisioned as where land owners keep their town homes, the plans for towns were carefully designed and planned. Land was set aside of courthouses, jails, churches, work houses, meeting halls and mills.

Cornwall, Ontario as Designed, 1790

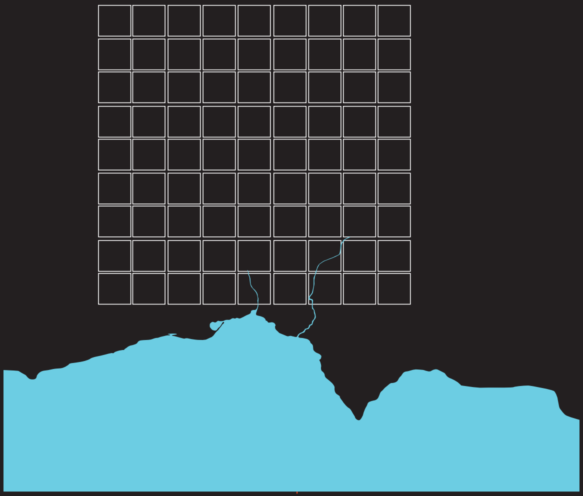
Figure 98: Cornwall as Surveyed, 1784.

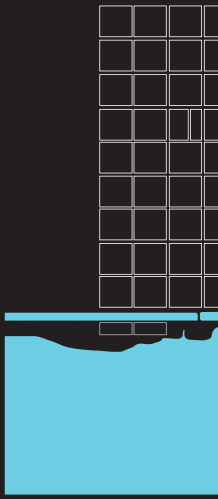
Cornwall, Ontario as Realized, 2014

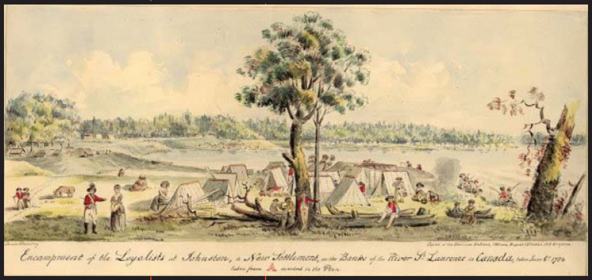
Figure 99: Cornwall, 2014

The Cornwall Story:
A Timeline of Development


Cornwall, 1786


Simcoe Plan, 1790



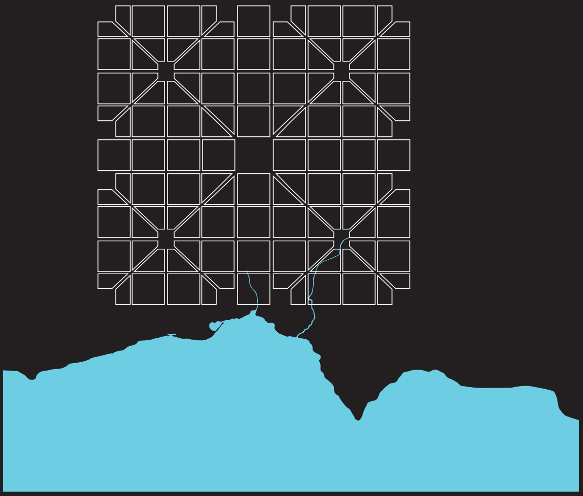


Settling Cornwall, 1784

Steamship on the Long Sault Rapids

Pioneer **Stage Coach** **C**

1784 1789 1790 1800 1825 1842

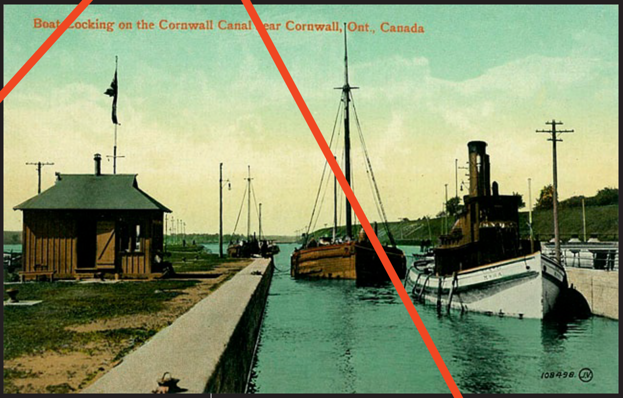

Lord Dochester Plan, 1789


Limestone Courthouse and Gao

- New Johnston Planned
- Johnston, NY is abandoned
- Town is Surveyed
- First School Built
- Wooden Courthouse Built
- Occupied by US Cavalry
- First Church Built
- 32 Houses Constructed
- Public Wharf on Waterfront
- Courthouse Burns
- Limestone Courthouse and Gaol
- Cornwall Canal Begins
- Police Village
- Town
- Garrisoned by 13th Regi
- Fir
- Cornw
- Upper Canada R
- W

Cornwall, 1842

Cornwall, 1879



Cornwall Canal

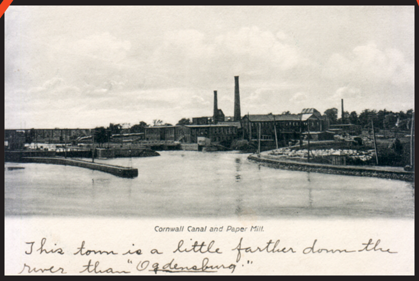
Cornwall Drydock

Canal I | Milltown | Canal II

1850 | 1875 | 1879 | 1900

ol, built 1834

Cornwall Manufacturing Company



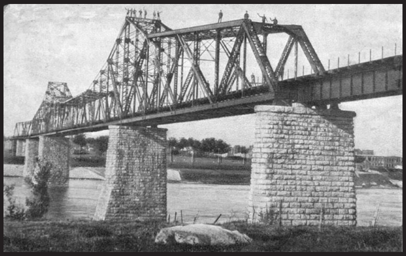
Toronto Paper Company

- nhall & Marketplace
- ment
- ■ First Hospital
- st Bridge
- vall Canal Completed
- Rebellion
- Wharf relcoated to Harbour
- ■ Incorporated as Town
- ■ First Highschool
- ■ Grand Trunk Railway
- ■ Township Hall
- ■ Prince of Wales visits
- ■ Second Textile Mill
- ■ Third Textile Mill
- ■ First Textile Mill
- ■ Fifth Textile Mill
- ■ Fourth Textile Mill
- ■ Street Lights
- ■ Thomas Edison installs electrical system
- ■ Sixth Textile Mill
- ■ New Market Building
- ■ Canal Expanded
- ■ Seventh Textile Mill
- ■ Paper Mill is established
- ■ First Waterworks
- ■ Eighth Textile Mill
- ■ Canal Expanded
- ■ First Arena
- ■ Electric Street Railway
- ■ Dry Dock
- ■ First B
- ■ Ot

Cornwall, 1926

Cornwall, 1945

Courtaulds Silk Mill, 1926



Cornwall-New York Bridge

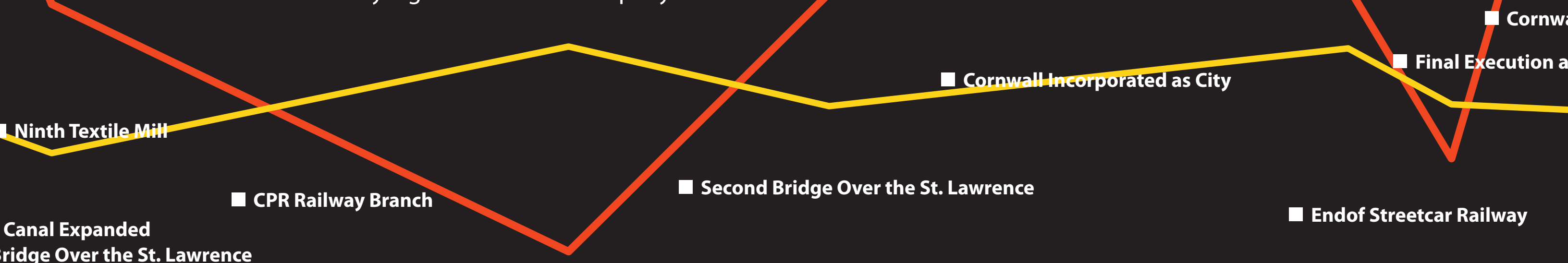
The St. Lawrence

Factory Town **Railway Town**

1900 **1925** **1926** **1945** **1950**

Cornwall Street Railway Light and Power Company

Moses-Saunders Power Dam, 1959



■ Cornwa

■ Final Execution a

■ Cornwall Incorporated as City

Ninth Textile Mill

■ Second Bridge Over the St. Lawrence

■ Endof Streetcar Railway

■ CPR Railway Branch

Canal Expanded

ridge Over the St. Lawrence

tawa-NY Railway

■ Courtauld's Viscose Rayon Plant

■ Seaway Constru

Cornwall, 1977

Cornwall, 2012

e Seaway Opens, 1959

Domtar Closes, 2006

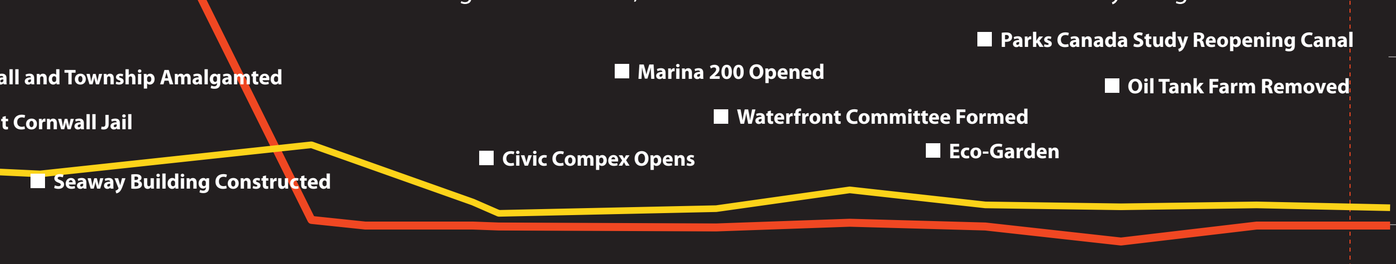
The Seaway City **Logistics Hub**

1975 **1977** **2000** **2012**

Half of Remaing Canal Filled In, 1977

Seaway Bridge to be Demolish

- ■ Parks Canada Study Reopening Canal
- ■ Marina 200 Opened
- ■ Oil Tank Farm Removed
- all and Township Amalgamted
- ■ Waterfront Committee Formed
- t Cornwall Jail
- ■ Eco-Garden
- ■ Civic Compex Opens
- ■ Seaway Building Constructed
- ■ Seaway International Bridge Opens
- ■ Seaway Opens
- uction Starts
- ■ Cornwall Canal Closes
- ■ Parts of Cornwall Canal Filled In



Cornwall Population Change

Ontario Population Change

Figure 100: Early French Map of the St. Lawrence River, 1757.

Cornwall and the Big Waterway

Canada's economic axis began as "a great competitive east-west trading system, founded on the St. Lawrence River and the Great Lakes, one end of which lay in the metropolitan centres of western Europe and the other in the hinterland of North America."[122] This was a transoceanic and transcontinental system that depended on waterborne commerce. Therefore exploration and trade routes in Canada depended on rivers and lakes. Rapids were portaged and lakes were crossed. Places emerged where people would cross paths, portage rapids, or secure places to spend a night in the wilderness. Of course none of this was invented by the newly arrived Europeans, they were making use of long-established native trades routes. Exploiting these established sites, early European colonists would create settlements.

Early European travellers in this landscape were amazed by its power and beauty. This land had simply come to be known on European maps as the 'great wilderness'. Home to native people for millennia, the features of the St. Lawrence River Valley easily spurred development. During his travels, Count Frontenac recorded in 1673,

> "*Continued the route, and passed through the most delightful country in the world. The entire river was spangled with Islands, on which were only oaks and hard wood ; the soil is admirable, and the borders of the main land on the North and South banks are equally handsome, the timber being very clean and lofty, forming a forest equal to the most beautiful in France. Both banks of the River are lined with prairies full of excellent grass, interspersed with an infinity of beautiful flowers; so that it may be asserted there would not be a more lovely country in the world than that from Lake St. Francis to the head of the Rapids, were it cleared.*"[8]

Physical barriers along the St. Lawrence River, foremost among them the Long Sault Rapids, were a challenge for early travellers. The story of Cornwall and its relationship to the St. Lawrence River would become a story of the link between going up and down of the river. Cornwall was settled on a resting place, Point Maligne, at the foot of the Long Sault Rapids.

The Search of the Kingdom of Saguenay

On Jacques Cartier's third trip to Canada, in 1541-2, he explored up the St. Lawrence River in search of the mysterious Kingdom of Saguenay. Several days upriver from Hochelaga (Montreal), fighting a strong current, the Cartier's vessel rounded a point of land and he realized the futility of their efforts. Cartier was faced with a sight he had never before experienced. The point of land had previously obstructed their view, but he could hear the roar of rapids like he had never experienced before. Coming around the point they could see rapids larger than any previously experienced in their travels. The entire width of the river rose and boiled ferociously, for as far as they could see ahead of them. It appeared to be a never ending staircase of roaring water. The explorers put their boats ashore at the bottom of this rapid. After venturing far along the rapids with no end in sight, they surrendered to the futility of portaging so far a distance due to such a great physical barrier. Returning to their campsite at the bottom of the rapid, Cartier gave the point of land they occupied the name Pointe Maligne and the rapids themselves the Long Sault Rapids. While resting on Pointe Maligne, under the roar of the rapids, the explorers abandoned their trip up the St. Lawrence River.

United Empire Loyalist Settlement

Following the American War of Independence that culminated in the Treaty of Paris in 1783, one hundred thousand crown loyalists found themselves as unwanted citizens within the newly formed United States. Crown Loyalists were citizens of the thirteen colonies who had remained loyal to the King. One group of Loyalists that had been displaced at the culmination of the American War of Independence was Sir John Johnson, 2nd Baronet of the Province of New York and his military units from the King's Royal Regiment of New York. In early 1783, Sir John Johnson and his Loyalists had been forced to flee New York. The crown Loyalists travelled north to Montreal, seeking to join with the British forces there.

They arrived in Montreal and awaited instructions on their course of action. When news of the Treaty of Paris arrived, the immediate focus of Sir Johnson's work was on the resettlement of crown Loyalists who were arriving daily. While in Montreal, Sir John Johnson became the crown agent for the settlement of Loyalists in the great wilderness west of Montreal, what today is known as Ontario. Between Montreal and Kingston along the St. Lawrence River there were very few settlements. In April 1774, Sir Johnson travelled to St. Regis to meet with the Mohawks of St. Regis and their chief Joseph Brant. Sir John Johnson had always been a friend to the Iroquois during his time in New York, and was fluent in the Mohawk language. Sir John Johnson's father, Sir William Johnson, 1st Baronet of New York, had been the British Superintendent of Indian Affairs and held the Iroquois in great regard. Sir John Johnson had fought alongside the Mohawks against the American Revolutionary forces, and had earned their respect. At this meeting Sir Johnson was able to negotiate the use of the lands that are now known as Eastern Ontario for the settlement of Loyalists.

On May 24th, 1774, Sir Johnson and over a hundred loyalist settlers travelled up the St. Lawrence River from Montreal with the expressed intent of founding a new permanent settlement. The St. Lawrence River had changed little since the time of Jacques Cartier, and the Long Sault Rapids remained an obstacle. Sir John Johnson's flotilla landed at Pointe Maligne. In honour of their previous settlement of Johnstown, New York, they named the new settlement New Johnstown. New Johnstown would soon be renamed Cornwall, in honour of the King, the Duke of Cornwall. By June 18th, 1784, there was a large number of families living in tents around New Johnston on Pointe Maligne, while a few wooden structures had been built.

The early settlement was organized in a unique, British military fashion. Early Ontario settlements from this period are organized in one mile by one mile square grids of nine by nine blocks. The British had modelled this after the Roman military camp. First Lord Dorchester, in 1789, produced designs for Cornwall that included a diagonal boulevard street system atop of the nine by nine grid for grand military processions. Lord Dorchester's vision for the settlement of what would become Ontario was a landscape of country farm estates, with urban town settlements for wealthy land owners. When General Simcoe, in 1790, was charged with developing these early communities, he put an emphasis on trade, commerce, and production. From the Simcoe plan of 1790, gone are the diagonal boulevards, but the city would remain as a nine by nine one square mile grid until the time of the Seaway Project.

War of 1812

The War of 1812 saw a renewal of armed conflict between Britain and the United States of America. During this conflict, the St. Lawrence River played a vital strategic role in connecting Montreal and Kingston. The Long Sault Rapids remained an unnavigable stretch of the St. Lawrence River, but by this time a road had been built along the shoreline that permitted coach and cart transit along its length. With wharfs built at the bottom of the rapids in Cornwall, much labour was spent loading and unloading vessels going up and down the river. In the fall of 1813, the American forces recognizing the importance of the waterway, began their St. Lawrence Campaign in an attempt to sever the vital strategic link between the Canadas.

In early November 1813, American forces had eluded the British at Kingston and had come down the St. Lawrence River past the Thousand Islands. Halting their advance just above the beginning of the Long Sault Rapids, they encamped at a place known as Crysler's Farm. That evening a group of American forces scouting along the Long Sault Rapids skirmished with local militia from New Johnston near Hoople's Creek among the Long Sault Rapids. Believing that they had driven the local militia forces off, the message was sent to the main American forces that the path to Montreal was clear.

Unbeknownst to the American forces at Crysler's Farm, the British had spotted their manoeuvres on Lake Ontario and their forces moving away from Kingston. Following a preplanned strategy, a force of six hundred and fifty soldiers departed from the garrison in Kingston and chased the American forces making their way down the St. Lawrence. Slipping by the American blockade of the Thousand Islands, they were in silent pursuit. Collecting British garrisons, militia forces, and Mohawk forces on their navigation down the St. Lawrence River to Crysler Farm, they arrived with a force of nine hundred, just upriver from the American encampment. The Battle of Crysler's Farm on November 11th, 1813, saw a heavily outnumbered British force repulse the American invasion of Lower Canada. The American defeat also marked the end of the American's St. Lawrence Campaign. This was Canada's equivalent to the Battle of Salamis. Acknowledging the devastating result in a military victory for the American forces at Montreal, the Battle of Crysler's Farm has been regarded as the battle that saved Canada. A large stone monument was erected on the site in 1895 by the Canadian Parliament, and Crysler's Farm became a National Historic Site in 1920. This battlefield of great national importance now lies at the bottom of Lake St. Lawrence since the creation of the Seaway Project.

Cornwall Canal

The merchants along the St. Lawrence River recognized the Rideau Canal, completed in 1832, threatened their financial interests. Having the ability to circumnavigate the Long Sault Rapids on the St. Lawrence River meant that material was being transported between Kingston and Montreal via the new Rideau Canal system and the Ottawa River, completely cutting Cornwall emerging economy. Soon after the opening of the Rideau Canal, prominent merchants in Cornwall got together to lobby the Government of Upper Canada for a new publicly funded canal project. This new canal project was to be built on the shores of the St. Lawrence River, allowing for easy circumnavigation of the Long Sault Rapids. The immediate case was made that a canal along the Long Sault Rapids would greatly reduce the shipping time between Montreal and Kingston.

It was in March 1834, during the last session of the Eleventh Parliament of Upper Canada, that a provision was made for the building of a canal along the shores of the St. Lawrence River to circumvent the Long Sault Rapids. The 18.5 km Cornwall Canal was to be constructed from Cornwall to Dickinson's Landing, at the top of the Long Sault Rapids. The local Member of the Legislative Assembly, Mr. Philip Vankoughnet, had successfully argued for a direct transportation between Montreal and Kingston. As one of the largest land owners in the Cornwall area, Mr. Vankoughnet would prosper greatly from this venture. His leadership in the vision of the Cornwall Canal once again secured Cornwall as a centre of commerce.

A local newspaper, The Cornwall Observer, records on August 15th, 1834, that a boisterous and large crowd gathered for the ceremonial ground breaking for the canal project. Upper Canada Chief Justice Robinson, who was at the time holding court in the newly constructed courthouse, was on hand to turn the first sod. Also in attendance was Sir John Colborne, the Lieutenant-Governor of Upper Canada. Following the ceremony, the Observer records that the great crowd withdrew to refreshments and many toasts were made. Many in attendance toasted to Philip Vankoughnet who had been the canal's great visionary. The construction of the Cornwall Canal would mark the end of Cornwall's stage coach period of bypassing the Long Sault Rapids, but would transform the town into an important centre of commerce connecting Lower Canada to the rapidly developing Upper Canada.

The construction of the Cornwall Canal had been ambitious. It was unparalleled in its scope and scale in British North America at the time. The Long Sault Rapids were a mighty force, a final bottleneck before the waters of the Great Lakes could make their way out into the gulf and finally the Atlantic Ocean. The waters that travel over Niagara Falls are joined by the Lake Ontario watershed and descend down the St. Lawrence River cascading over the Long Sault Rapids. The work was slow and difficult. Bogging down in the glacial till, the construction of the canal stretched on for eight years. The Government of Upper Canada was beginning to get concerned about the progress of their investment and sent a company of soldiers from the 13th Regiment from Kingston to maintain peace and order in Cornwall.

The Government of Upper Canada originally had raised seventy thousand pounds sterling in 1834, and by 1838 the Canal remained unfinished and more than the original sum had been expended. Construction had halted briefly during 1837 due to the Upper Canada Rebellion, but soon resumed. Although there was a financial depression following the Upper Canada Rebellion, the completion of the canal was one of the top priorities for the Government of Upper Canada following The Union. After much expenditure of labour, treasure, and blood, the Cornwall Canal was completed and opened for navigation in November, 1842.

The direct shipping route along St. Lawrence River between Montreal and Kingston quickly syphoned off almost all commerce on the Rideau Canal. The Cornwall Canal was a piece of infrastructure that not only vastly improved the St. Lawrence River Valley's economy, but the economy of all of Upper Canada and the Great Lakes Basin. Early mills were built along the Cornwall Canal as the water from the canal system provided a limitless supply of energy.

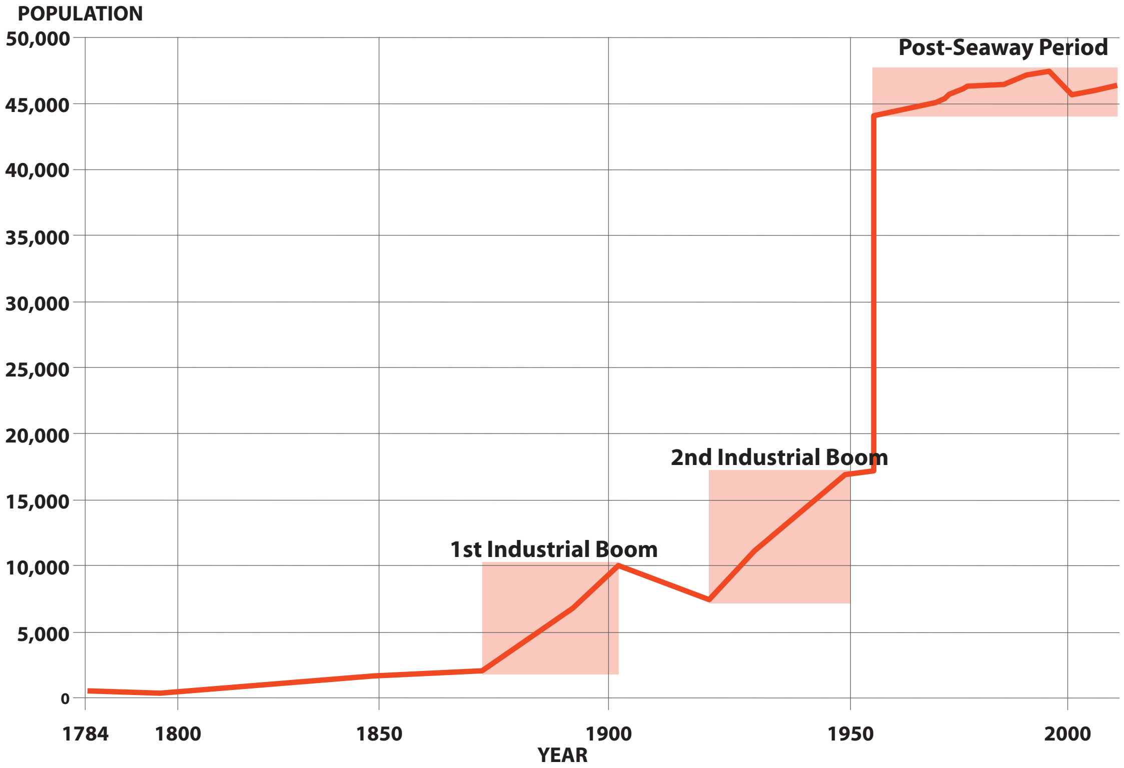
Grand Trunk Railway

The Cornwall Canal was the sole means of shipping goods between Montreal, Kingston, and Toronto until the completion of the Grand Trunk Railways (GTR) between Montreal and Toronto in 1865. The GTR marked the emergence of railways in Upper Canada. The GTR was a direct competitor for shipping along the St. Lawrence River and the Cornwall Canal, and the use of the canal began to decline. The ability to move goods and material with the speed of a steam engine train directly into cities and towns was far superior to that of a waterborne steamship. The Cornwall Canal had become outmoded. With the reduction in tonnage along the canal system, it suffered from neglect. It was only through the settlement of Western Ontario and the Prairies did the shipping along the St. Lawrence River system see a resurgence. Western farmers were looking for cheap transport for their grain to Europe, and the existing waterways had a decisive economic advantage over the railways. Capable of carrying multiple trainloads within a single ship, the financial advantage was unparalleled. It was with this renewed interest in shipping along the St. Lawrence River that the Canadian Canal Commission of 1871 recognized the economic advantage to be gained by developing the existing waterways.

Cornwall Canal II

The second phase of the Cornwall Canal began in 1876. The work was undertaken in pieces with new locks and channels being constructed adjacent to the existing lock systems so that the system would not have to be shut down during construction. The second phase of canal construction allowed for larger vessels to transit the canal system, therefore increasing the efficiency of shipping along the St. Lawrence River. The Cornwall Canal II project was completed in 1891. Once again, further development of the Cornwall Canal had unforeseen beneficial effects on the economic development within the City of Cornwall. Soon the merchants and industrialist along the St. Lawrence River Valley began to dream big. There were ocean going vessels, and new Lakers there exceeded the capabilities of the Cornwall Canal, and the other St. Lawrence Canal systems. These visionaries first sowed the seed of a much larger canal system. A canal system that could permit the largest ships of the world to reach the deepest parts of North America via the St. Lawrence River and the Great Lakes. This is where the idea of the St. Lawrence Seaway began.

Figure 101: Entryway of the Cornwall Canal, 1940s.



The Seaway City, Cornwall

"Watch us grow!" shouted large letters on the sign. The sign announced the final approach to your destination, Cornwall, Ontario. Something big was happening here, and you found yourself in the middle of it. A new trajectory for the future was designed and being built. In 1956, by an act of provincial amalgamation the city had doubled in population overnight, from 17,000 to 36,000.[123] Politicians openly talked about reaching 100,000 within the next decade. As we are aware, none of this materialized.

Once an industrial hub on the shores of the St. Lawrence River, a slow industrial decline began with the completion of the St. Lawrence Seaway. The Seaway Dream had failed to be realized. Six decades on, Cornwall is just beginning to wake up to the realization that the Seaway Dream is soundly over. There will be no parades or bands marking this occasion. Since the completion of the Seaway Project, Cornwall's population neither grew nor shrank. In Cornwall, something began with the SLS&PP.

Cornwall is a unique place with unique challenges and opportunities. The city's progression has been hindered since the completion of the Seaway Project. The community is not caught in a population shrink that follow similar conditions of deindustrialization. Massive parcels of land set aside during the Seaway Project have found purpose in logistical warehousing utilizing the Highway 401 Windsor-Quebec City corridor.

Logistics Industry

In the midst of the St. Lawrence Seaway & Power Project, the Ontario Municipal Board amalgamated the City of Cornwall with Cornwall Township.[124] Increasing 34 times in size overnight was a shock to the city that would have ongoing repercussions to the present day. Intended for industrial development, this land has mostly sat vacant for decades. It was in 1998, with the entrance of Walmart into the Canadian marketplace, that this land began to find purpose, and spurred an economic transition. Supply Chain Management (Walmart) recognized that Cornwall had an available workforce, inexpensive land, and opened a 1.5 million square foot distribution centre along Highway 401.

Supply Chain Management's investment in Cornwall marked the beginning of the logistics period in Cornwall. Today the City of Cornwall is home to distribution centres of Walmart, Target, Shoppers Drug Mart and Benson. This rise in the service industry in Cornwall dovetailed with the deindustrialization. Today over four million square feet of warehouse space is located in Cornwall's industrial park. These warehouses operate on a scale unforeseen before in the Seaway Valley. The warehouse facilities are so large they are a landscape onto themselves.

Cornwall Waterfront

The North American decline in manufacturing has greatly affected Cornwall, but it is one of the rare cities that has successfully transitioned to the service industry, with the rise of a thriving logistics industry. This recent development in Cornwall has begun to spur a shift in development within the city towards Highway 401. This development shift towards the undeveloped north-end, away from the historic waterfront, creates an uncertain future for Cornwall's waterfront.

Once the site of major investment and activity, today Cornwall's waterfront has an undefined purpose. The decline in industry following the completion of the Seaway Project,

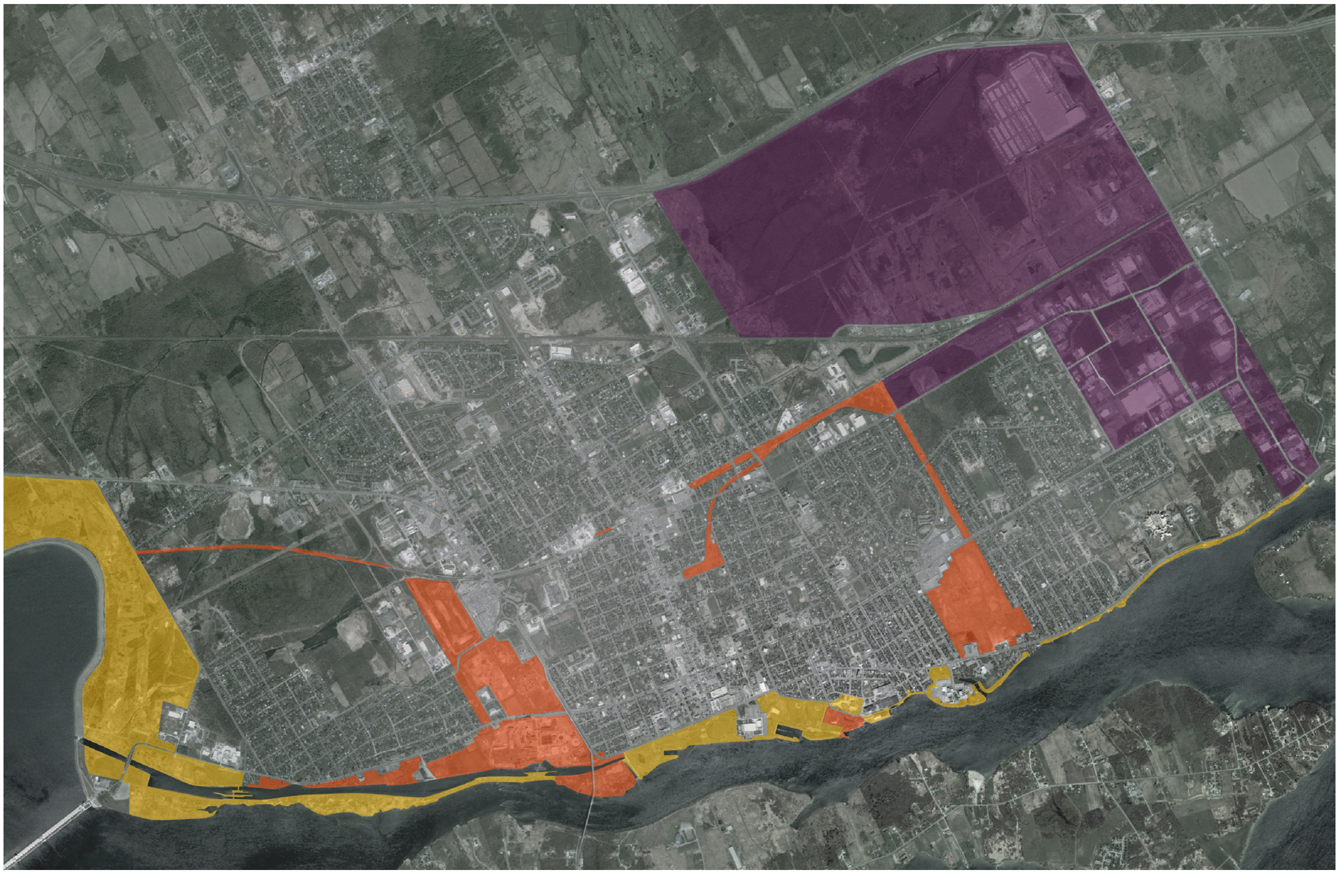


Figure 102: Cornwall Seaway lands (Yellow), Post-industrial (Orange), Industrial Park (Purple) .

and ongoing, has left much of Cornwall's waterfront industrial sites vacant. The Seaway dream has left Cornwall with a difficult reality. The optimism of the 1950s is now matched with uncertain economic transitions and a contaminated landscape. With recent shifts in the architecture of the city towards Highway 401, at no point in Cornwall's history is a design strategy for the Cornwall waterfront more important.

Since the completion of the Seaway Project, ongoing landscape manufacturing has further changed Cornwall's artificial waterfront. The Cornwall Canal was seen as a barrier to access the shoreline, and a large part of what remained of it, along the central waterfront, was filled in the late 1970s.[125] A portion of the Cornwall Canal remains along the western waterfront, adjacent to the Moses-Saunders Power Dam, and is known as the Cornwall Canal Lands.

The Seaway Project resulted in the city's waterfront and what remains of the canal system under Federal, Provincial and Municipal control. This has hindered development and redevelopment. The former industrial brownfields are under the control of private interests. The mixture of different levels of government, and private interests makes this a complex landscape.

Cornwall's waterfront land was simply seen as a leftover appendage during the Seaway Project when they were planning for the 'Seaway City'. The Seaway Project truncated the city of Cornwall from its origin and history as a waterfront community. The Seaway Project amputated the city from its spirit as a riverfront community.

With decades of industrial decay along the waterfront, it appeared that the city of Cornwall around the turn of the century was clearly post-industrial. The emergence of the service industry, in the form of the logistical warehouses along the Highway 401 corridor in the north-end of the city, was a signal of successful economic transition. This deindustrialization was put into question with a remediated waterfront site returning to industrial use, a decade following remediation. The re-emergence of an urban waterfront industrial facility has put the idea of post-industrial into question.

The period of waterfront urban industry is over. Former industrial sites that had employed hundreds of people are now brownfields. What remains of the Cornwall Canal is in decay, and has no heritage protections. New capital investment for industrial use should be resisted. Cornwall's complex relationship to the waterfront is as old as the community itself. A study of Cornwall's relationship to the shoreline should inform the future design strategy. Much of this land is outside of direct municipal control, but it is still part of the city of Cornwall. A study of the manufacturing and construction of the artificial shoreline will illustrate the role of the waterfront within the community. A reconnection to the Cornwall waterfront, amputated from the city's spirit during the Seaway Project, is an important goal for the future design strategy.

Conclusions

Today, the Seaway City remains rooted within the urban centre, the original square mile, but is now expanded to adjacent territories. The city is no longer a dense urban nine by nine block grid, it consists of a series of territories. The series of territories is a product of design empowered by the capabilities of absolute authority. Urban and rural, natural and engineered, all formed aspects of the Seaway City. Over time, the original urban square mile began to expand and develop the adjacent territories that were attached during the Seaway Project. As analyzed and detailed above, Cornwall never developed into the Seaway City that was envisioned by its post war modernist designers, but their design approach in establishing the Seaway City continues to be played out.

Cornwall, the Seaway City as envisioned, was a city whose success would rely heavily on the fortunes and success of the SLS&PP. The designers of this new city designed one that would be intrinsically connected to infrastructure. The Seaway never reached, nor even approached, its full potential, and the Seaway City as designed never materialized. The Seaway Project had wielded its absolute authority, and the Cornwall of today remains in the shadow of this top down design. The contemporary situation of Cornwall today continues to play out this process that began six decades ago. The urban city has continuously been migrating to the new territories connected by the Seaway Project, but the city clearly relies on its location along the Windsor-Quebec City corridor of the 401 highway, while the Cornwall Harbour and the former industrial sites along the waterfront are derelict.

New territories attached to the city by design that were intended for major industrial manufacturing remained completely derelict until the twilight period of the 20th century, when the city's location and available workforce, due to the decline in manufacturing, made it an ideal site for a logistics hub along the 401 highway. Other territories have remained reserved for infrastructure and agriculture, while some have emerged as urban sub centres.

New developments, and new urban sub centres continue to emerge as the urban city spreads to the periphery. The process of development of these periphery territories is a unique landscape within the contemporary City of Cornwall. It is a city that was envisioned on drafting boards of the post war period, and was produced by an authority that had no connection to the local condition. Yet the scheme continues to be played out, like an outdated operating system on an updated machine. I state it plainly, it seems antiquated to continue exhibiting the degenerative practice of reprinting the urbanity envisioned with the Seaway City planners onto these yet untouched periphery territories.

New developments, and new urban sub centres should continue to emerge as the urban city continues to spread to the periphery, and additional economic infrastructures should be created as required or envisioned. The design principles produced by the planners of the Seaway City are outdated. The time of absolute authority is past. The city they envisioned no longer reflects today's reality. No longer can we act without a connection to the local condition. That has been attempted. Today, the contemporary challenge of design in Cornwall must address its regeneration in preparation for the city of tomorrow. This is a new infrastructure, one that combines and restores all territories as produced by the modernists. This goes beyond just the post-industrial sites, and urban sub centre drosscapes, it requires an entire regeneration of the city that was originally truncated six decades ago. The task of today is a regenerative preparation for the city of tomorrow.

4

EMERGING THEORY AND PRACTICE FOR POST-INDUSTRIAL CONDITIONS

The analysis of the towns and cities along the Seaway revealed similar under-performance and challenges concerning growth. In the name of progress, these towns and cities were detached from their origin, the St. Lawrence River and overcome by extraneous circumstance. This top-down, macro engineering exercise harmed the citizen's role in the community. Six decades later, a new challenged for these waterfront communities has emerged. The regional economy of the Seaway Valley has been deindustrializing. The decline of waterfront industry has further detached these communities from the river. The regeneration of the public's connection to the river is critical for the future of these communities.

Emerging theory on urbanism that reflects these conditions will be reviewed. These case studies have been selected from settings and scales that are dissimilar to the situation along the Seaway, but speak to techniques and strategies that could inform the design proposal. Regardless of specific corollary circumstance and scale, the experience of waterfront regeneration and the procurement of human agency in the following examples will serve as a role model and an ambition for the design proposal.

Central Toronto Waterfront
Toronto, Ontario
West8 (2006-2011)

Cornwall Waterfront
2 km^2

Toronto Central Waterfront
3.5 km length

The Toronto Central Waterfront extends 3.5 km along Lake Ontario and is directly adjacent to the downtown business district. Toronto as a waterfront city could be one of its most valuable assets, but it currently lacks this part of its identity. Since the 1970s, attempts to establish a coherent planning vision have failed, and what was produced was a patchwork of development projects. There was no coherent vision for linking individual micro pieces to the macro, visually or physically. West8 took on the task to address this deficiency by creating a consistent and legible image for the Toronto Central Waterfront. This vision was not solely architectural in focus, but put a great emphasis on functionality.

West8 established key priorities in their master plan. They put a priority on forming connections between the thriving portions of the city set back from the lakefront to the waterfront, and saw that a continuous, publicly accessible waterfront was paramount to accessibility of the site. The plan outlined a vision for the Toronto Central Waterfront that brought a focus on ecology. This new sustainable green imprint on the waterfront is a new feature of Toronto's rich identity.

West8 outlined four simple gestures that could create a new public understanding of Toronto as a waterfront city. A waterfront promenade, a new urban promenade set back, a series of floating waterfront elements, and connections toward the waterfront.

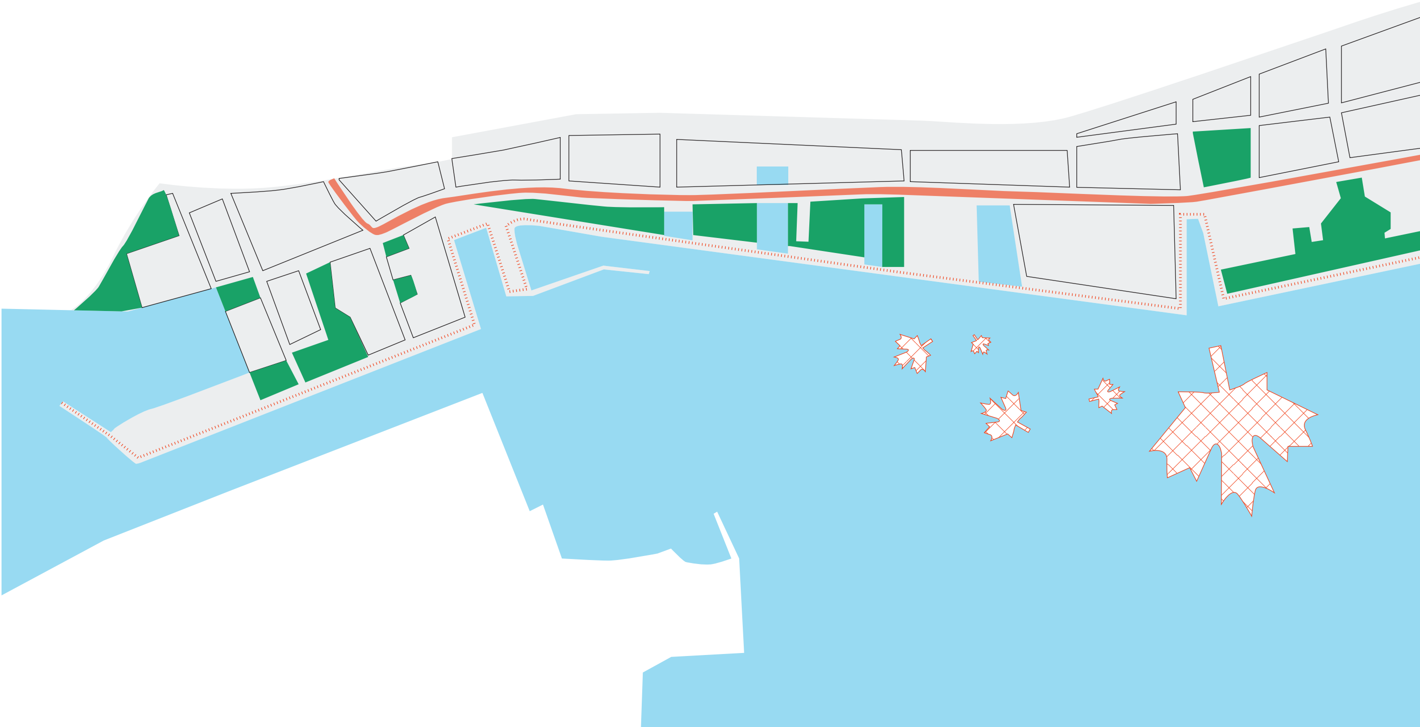
Figure 103: Central Toronto Waterfront, 2013

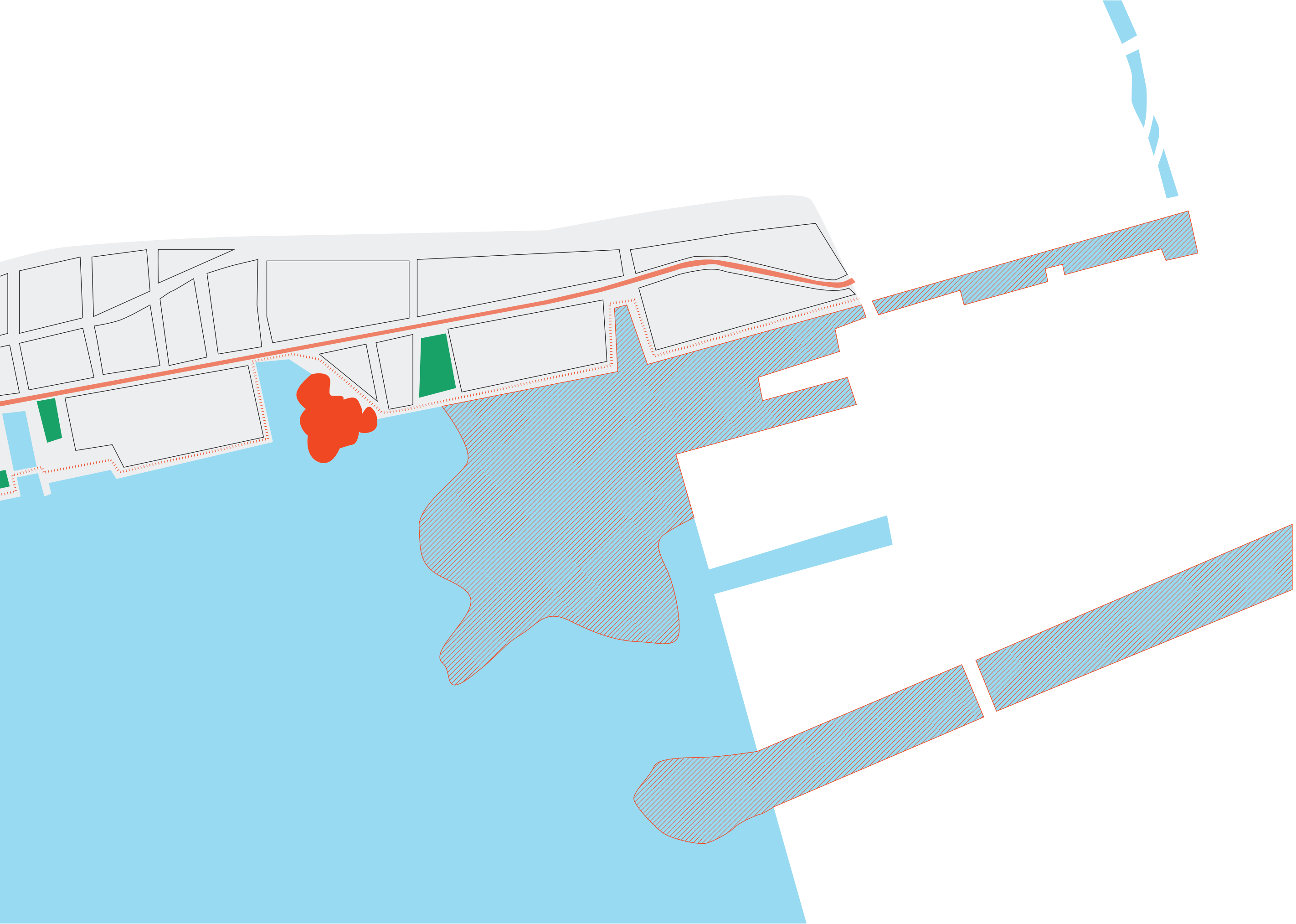
Toronto's Central Waterfront was once the front door to the historic city of Toronto. This natural artifact is an important aspect of the city's identity. Now a post-industrial landscape, much of the land is open to new uses. West8 saw that public accessibility to the waterfront was under threat by private development. They included a continuous, publicly accessible waterfront promenade that is paramount to accessibility of the site. Much of Toronto's Central Waterfront was constructed for industrial uses in the 20th century. Now that most industrial use has left the waterfront, these former industrial sites are ideal locations for public use. Elements of previous waterfront planning attempts has created a patchwork adjacent to the shoreline. West8 proposed creating a new system of floating elements on the water that could create new connections.

To trigger early action, in 2006 Waterfront Toronto gave West8 the mandate to explore the proposition of their design proposal for a ten day period during the summer of 2006. The goal was to educate the citizenry on opportunities. The temporary landscape intervention was constructed so that the public could experience the benefits of the values that West8 had outlined in their proposal. Then a ten day trail experiment saw the removal of street traffic from the waterfront Queen's Quay and saw it morph into a pedestrian and recreational promenade. Public street art and plantings were installed, and the space reconfigured. West8 put a priority on forming connections between the thriving portions of the city set back from the lakefront to the waterfront, and saw that a continuous, publicly accessible waterfront was paramount to accessibility of the site.

The proposal creates a waterfront that is public, diverse and expressed through a multiplicity of experiences. Flexibility and diversity are the key properties of the future of Toronto's waterfront. Recognizing the patchwork created by previous planning attempts, West8's vision for Toronto put forward a unified language of public use along the shoreline. Development is required, but the public are paramount in this vision. Toronto's waterfront is completely artificial, as Front Street is the historical waterfront. Decades of infill have changed the landscape. Ecological regeneration and the establishment of new wildlife habitats is a priority.

Figure 104: Toronto Central Waterfront rendering.





Waterfront Path
- Open to public
- Creates access to waterfront and new connections

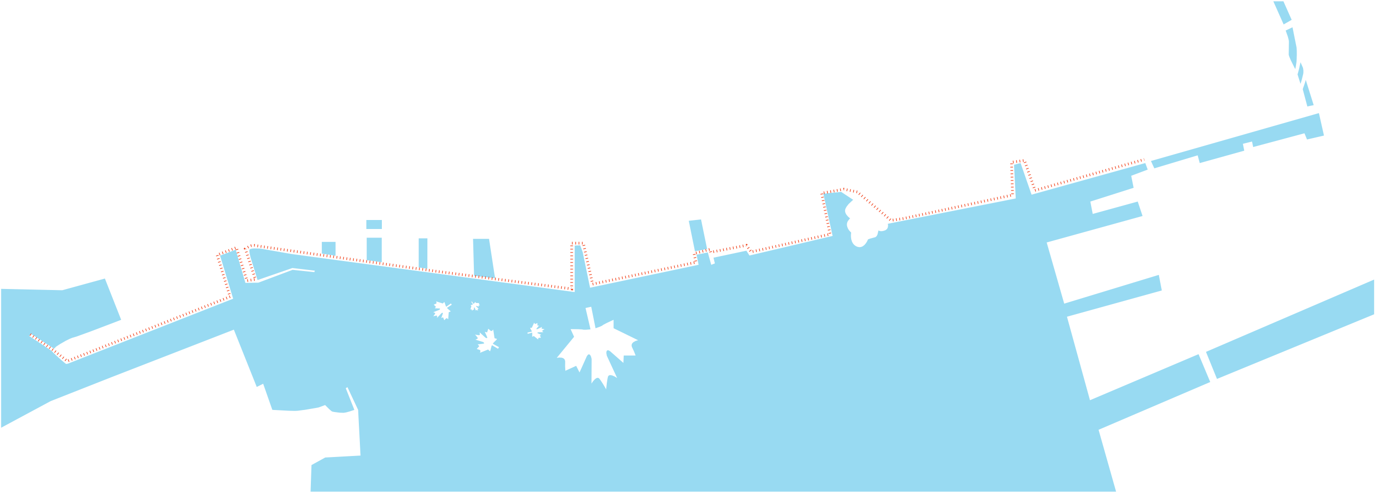
🟩 **Park Spaces**
- Open to the public
- Adjacent to Waterfront

▨ **New Ecology**
- Native Plantings
- Regeneration after decades of industial use

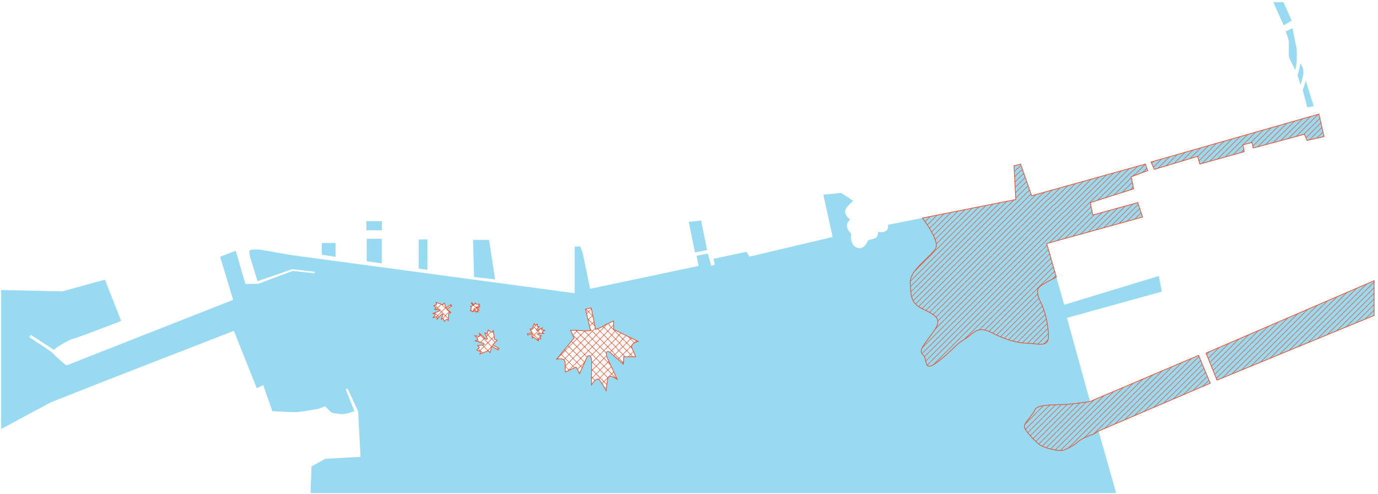
New Promenade
- Open community space for events
- Multiple recreational use, public art

New Islands
- Ecological preserve
- Aim to regenerate native species habitat

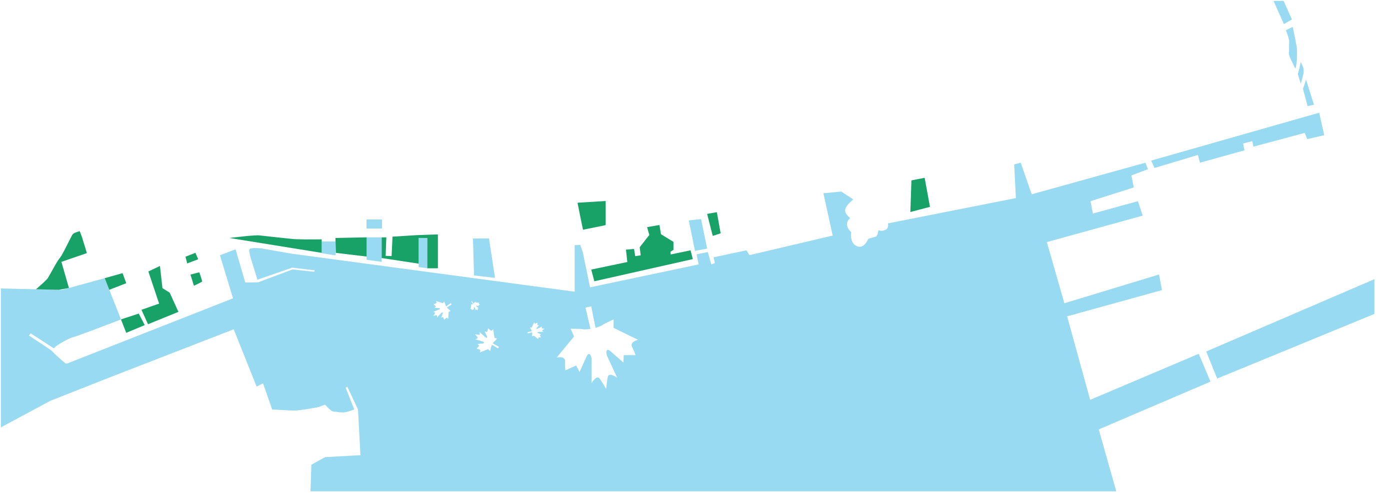
Catalyst Site
- Special waterfront construct
- Catalyst site for development



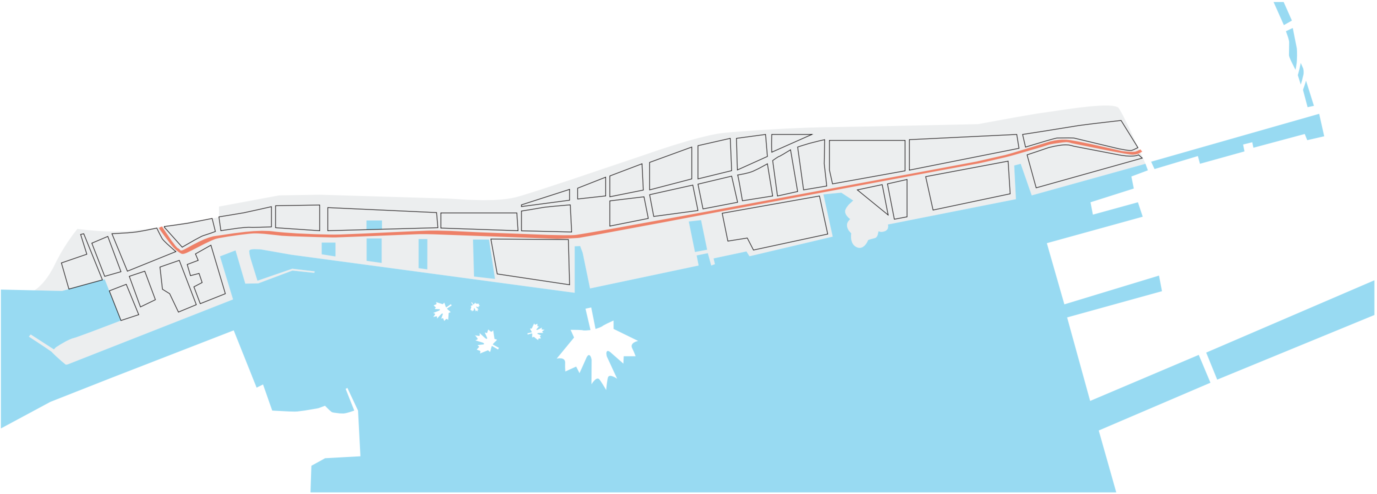
Waterfront Path
- Physical shore and floating elements
for access and circulation
- Area open for exercise
eg. running, cycling, roller skating



Re-establish Native Ecology
- Existing channels as ecological
 catalyst areas
- New islands as nature preserves



Open Park Space
- Public sites preserved as open space
- Open use, space for public events



New Promenade
- Queens Quay Boulevard recalibrated
as new urban promenade
- Connects public spaces along waterfront
for multiple uses

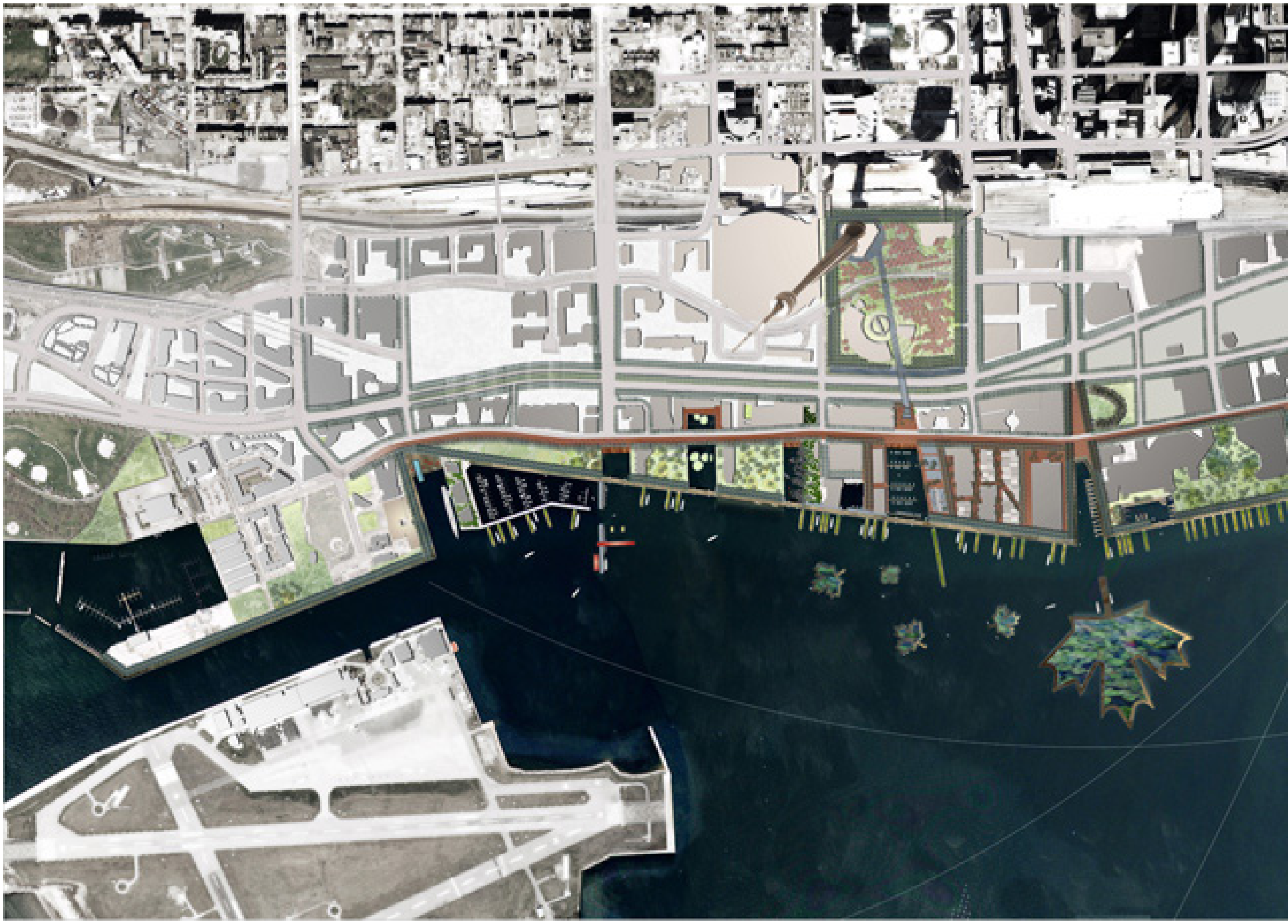


Figure 105: West8's Master Plan for the Toronto Central Waterfront

“It is important to note that landscape is not only a formal model for urbanism today, but perhaps more important, a model for process. Time is a fundamental variable in landscape work. Landscape cannot be designed and controlled as a totality; they are instead scripted as scenarios projected into the future, allowed to grow and evolve over time. Landscapes are more the product of management and cultivation than design.”[126]

Stan Allen, Mat Urbanism: The Thick 2-D

Landscape Urbanism

The city is merely a constructed organism, produced by a collective, that interacts with the biotic and abiotic environment. This is the principle ecological underpinning of Landscape Urbanism. As an emergent field of urbanism, Landscape Urbanism did not develop new beliefs on creating ideal cities, but seeks to capture new and established concurring processes. Viewing and understanding the city simply as an organism, or more accurately the joint production of a community of organisms, within a series of dynamically interacting ecosystems emerged in the final decade of the 20th century. Coinciding with a reemergence of urban environmentalism, Landscape Urbanism has filled a hole created by urban designers and planners who have been unable to engage with environmental factors.

Decades of deindustrialization across the western world has produced brownfield sites within and along the periphery of the city. Additionally modern planning practices have produced abundant underutilized sites within the city that solely houses infrastructure. Rather than view these sites in the city as abandoned or vacant, Landscape Urbanism makes the case for a departure from object spatial qualities. Landscape Urbanism would view these lands with an ecological lens that would hold these lands as simply being in a provisional state, currently involved in a durative process. In this regard, landscape supplants architecture as the basis of urban design.[127]

Origins

Charles Waldheim states that the origins of Landscape Urbanism can be traced to postmodern critiques of Modernism, specifically for its inability to produce a "meaningful" or "liveable" public realm and the failure to come to terms with the city as a historical construct of the collective consciousness.[128] Waldheim links the social and environmental disasters of industrialization with the postmodern retreat to the comforting forms of nostalgia, questioning the Postmodern belief that neighbourly architectural character could contravene a century of industrial economy.[129] Critical of postmodern architecture's regression to the picturesque absent of context, Waldheim argued that postmodern's scenographic approach was completely incapable of addressing the structural conditions of industrialized modernity that tended toward the decentralization of the urban form. This decentralization of urban form challenged urbanism in ways that Postmodernism proved incapable of addressing. However it is Landscape Architect James Corner who argues that the only way to escape "the bureaucratic and uninspired failings" of the planning profession and the dead end of post-industrial modernity is through a synthetic and imaginative reordering of categories in the built environment.[129] This reordering of categories recognizes landscape as a product of process.

Emergent Thought

Stan Allen in his paper "Mat Urbanism: The Thick 2-D" argues that the properties of surface in landscape are much more relevant to design than the abstract surface forms developed digitally that continue to emerge from contemporary architecture.[130] Allen states, "The surface in landscape, on the other hand, is always distinguished by its material or performative characteristics [...] to be more precise, its performative effects are the direct result of its material characteristics."[131] Allen believed that through understanding of surface conditions, designers can activate space and produce urban effects without the "weight apparatus of traditional space making."[132]

Architect Charles Waldheim argued in his paper entitled "Landscape as Urbanism" that landscape is uniquely capable of describing the conditions for a radically decentralized urbanization, especially in the context of complex environments.[133]

This view of landscape as a lens for urbanism was contrary to the contemporary positions held in the discipline of architecture, urban design, and planning. Waldheim goes on to state "In the context of decentralization and decreasing density, the 'weighty apparatus' of traditional urban design proves costly, slow, and inflexible in relation to the rapidly transforming conditions of contemporary urban culture."[134] Waldheim believed the inability of the 'weighty apparatus' of traditional urban design would create a need for Landscape Urbanism. Contemporary urban design has been extremely challenged by the rapidly transforming conditions of urban culture. James Corner, in his paper "Terra Fluxus", traces the necessity for Landscape Urbanism to the unification of the previously separated landscape and cityscape. The unification of these two previously separated fields was required due to the failures of previous strategies. Corner states, "today the city has broken its walls to subsume and homogenize its surrounding landscape in an economic and "technological blitzkrieg" the various "scapes" are now in conflict and with boundless definition."[135] This process of homogenization under traditional planning strategies continues today unabated.

What is Landscape Urbanism?

After years of experience in dealing with failings of modernist and postmodernist planning strategies, James Corner came to the conclusion that landscape's conceptual scope, with particular regard to thematics of organization, dynamic interaction, ecology, and technique better reflected the real complexity of cities and offered an alternative to the rigid mechanisms of centralist planning.[136] Human activities, including those that alter the physical environment, are taken to be already an integral and necessary part of the ecosystem of the specific site as they are of the larger bioregion.[137] New Zealand Landscape Architect Rod Barnett holds the position that Landscape Urbanism finds both its theoretical and its operational strategies within the discourse of landscape architecture itself.[138] Reflective of cities, this inherently includes the constructed physical spatial form, but views it with an understanding of duration and process. Corner is not simply interested in processes, or spatial form, but argues for an understanding of how the flux of processes interact with spatial forms of urbanism. This is understanding space with duration. Allen argues that the idea of a landscape that progresses and alters over time can be applied to spatial programming.[139] The outcome produced is an architecture that positions itself as a scaffold that embraces the flux of contemporary urban life. Landscape Urbanism is the only form of practice that has the ability to approach capturing the complexity, scale, and scope of the systems that condition the distribution and density of urban form.[140]

Waldheim places Landscape Urbanism as the only emergent practice that is capable of capturing the indeterminacy and flux of the contemporary city.[141] Waldheim believes that it is the employment of landscape as a medium that is uniquely positioned to respond to temporal change, transformation, adaptation, and succession. This makes landscape an appropriate lens for the contemporary urban conditions that are open-ended, evolving, and undetermined. Now more than ever before this is the condition of the contemporary city. Faced with the challenge of specificity vs. open-endedness and human activities vs. natural systems during the Downsview Park competition in the year 2000, Corner and Allen in their proposal 'Emergent Ecologies' designed a deployment of precise series of forms and pathways that will each support the emergence of self-organizing flows and behaviours in time, resolving that geometry and form are less important for what it might mean or look like than for what it actually does.[142] The produced open-ended outcomes will be driven by the invisible hand of contemporary life. In support of this notion, Barnett argues that Landscape Urbanism views city development is a fundamental bottom-up process, indeterminate, open-ended and a bewitching flux of agents and events. Citizens define the durative processes. For Barnett, the paramount principle of Landscape Urbanism is the lens that everything is forever in a state of becoming, but never is there an attainable state of being.[143] Rather than a weakness, this state of becoming is reflective of the natural process of duration. Landscape Urbanism is therefore interested in operations, seeding, and procedures of performative design rather than simply finalized constructs.

The vacant spaces within cities produced by contemporary planning strategies are not truly vacant nor abandoned. Landscape Urbanism inherently has the ability to capture and better understand the conflation, integration, and fluid exchange between the natural environment and engineered infrastructural systems.[144] It is therefore Landscape Urbanism projects that employ landscape as a medium capable of exploring connections between infrastructure, public events, and the state of future indeterminacy. The result of this deployment of perception is that it puts the primary attention on process rather than form. Landscape is forever in the state of becoming, but never being. Constructed spatial form is not understood as a permanent object, but rather an object within a temporal moment. Barnett likens this view of the constructed spatial form as a mirage or snapshot through time.[145]

Architectural objects, or constructed spatial form, are impermanent ephemeral forms in the landscape of process. This is the physical condition of the flux of contemporary urban life and the city.

This view marks a distinct contrast between Landscape Urbanism and the Modern Planning conclusions produced in 1934, at CIAM IV in Athens. CIAM IV produced the strategy that believed that the individual building in the landscape, the constructed spatial form, was the best model for producing cities.[146] The modernist outcome of CIAM IV reduced the city to its smallest quantifiable unit, the individual building, and subsequently negated the constructed spatial form from the existing spatial system and topography. Landscape Urbanism is opposed to this Modernist approach, refusing to place absolute priority on the architectural object. Australian Landscape Architect Richard Weller argues that, "as any landscape architect knows, the landscape itself is a medium through which all ecological transactions must pass: it is the infrastructure of the future."[147] This emergence of the landscape itself as a medium for urbanism acknowledges that the urban system itself has greater similarities to an ecosystem than a designed finalized spatial form. Landscape Urbanism subsequently positions the architect to conduct, orchestrate and guide, but never to control. Absolute control of the medium of landscape is completely unattainable.

This positioning of the architect in the role of regulator and director of flux has lead some theorists, Barnett among them, to argue that Landscape Urbanism's emphasis on bottom-up, community participatory strategies of design, are anything but design.[148] Barnett puts it simply, "design by committee will always be difficult, and not to design (but to regulate or guide) is simply that: not-design."[149] However, Allen argues against this position, stating that unlike the open-ended flexible non-design of the 1960s, the orchestrated unresolvable processes require specific design conditions in order to release the best of possible opportunities.[150] This requires the designer to seed or create scaffolds with the intent of creating catalyst moments. Moreover, Allen disputes this position stating, "It is my proposition that you need to give something a very specific form in order to cultivate the richest possible dynamic."[151] In response to criticisms levelled at the finalist proposals for the Downsview Park competition concerning their vast indeterminate potentials, Julia Czerniak argued that "indetermination is not a scientific (ecological) metaphor for a lack of design."[152] Continuing with this idea, Czerniak states that indeterminacy requires volatile initial conditions and catalytic provocations.[153] The criticism concerning the role of the architect, or specifically the role of design, has declined with the realization of projects that are heralded as reflective of the principles of Landscape Urbanism.

The foremost shortcoming in the projects undertaken under the banner of Landscape Urbanism has been absent engagement of the citizen. The bottom-up strategy that truly reflects the flux of contemporary life has been difficult to orchestrate. In Ontario, Toronto has emerged over the past fifteen years as a nest of realized Landscape Urbanism projects. Leading among them are Waterfront Toronto projects including West8's Central Waterfront, Field Operation's Lake Ontario Park, and MVVA's Don River Park. Landscape Urbanism was meant to create an ecology of various systems and elements that trigger a diverse network of interaction, rather than finalized objects of design. What has been produced is finalized architectural objects set among a landscape with the hallmarks of process. Perhaps over time the durative nature of these projects will reveal themselves. Corner states clearly in his paper Terra Fluxus, "The thrust of this work is less towards formal resolution and more towards public processes of design and future appropriation."[154] There is a complete absence of a process that engages with public strategies of design in the Waterfront Toronto projects listed above. Rather than engage with public processes of design and embrace city development as an indeterminate fundamentally bottom-up process, these Landscape Urbanism projects have leaned towards the production of the finalized architectural object within the established determinate planning strategy. The argument for process over form is rationale and at this point in time, a logical progressive view of urbanism following the failures that have produced the contemporary city. The theoretical underpinnings of Landscape Urbanism are sound, but it is the realization of these projects, particularly with regard to their means, that leaves one searching for a true bottom-up determined indeterminacy that engages the role of the public within the flux of contemporary life.

Zhongshan Shipyard Park
Guangdong Province, China
Kongjian Yu (2001)

Cornwall Waterfront
2 km^2

Zhongshan Shipyard Park
0.11 km2

The environmental crisis in China is without parallel. As the forces of globalization has reshaped the rural and urban landscape of the world's most populous nation it has also degraded their cultural identity.[155] Kongjian Yu suggests that cultural identity may be regained and preserved with a natural sense of spiritual connection to the Earth.

In response to this environmental degradation, Kongjian Yu believes that landscape architecture can lead the way in a new form of urban development by planning and designing an infrastructure based on harmony with ecology.[156] This new medium, a preserved native ecology-based landscape urbanism, can create a connection between the land, the people, and the spirits.

Zhongshan Shipyard Park is built on the site of an abandoned shipyard. Likely to be razed to give space for urban development, the shipyard reflected the remarkable fifty-year history of socialist China, including the Cultural Revolution of the 1960s and '70s, and recorded the experiences of common people. It supports the contemporary common people and illustrates Kongjian Yu's environmental ethic called, "Weeds are beautiful."[157]

Figure 106: Zhongshan Shipyard Park, 2013

The former shipyard site included an existing lake of fluctuating water levels, existing trees and vegetation. It also contained the rusted wreckage of docks, industrial cranes, a railway, a water tower and other heavy machinery. The site was an environmental disaster. The contaminated site was a blight on the Zhongshan waterfront. Kongjian Yu had the objective of improving the landscape of the downtown area of Zhongshan. In addition to this objective, he also wanted to increase recreational opportunities in the downtown.

The shipbuilder that had occupied this site went bankrupt in 1999. Fifty-years of heavy industrial use had left the site polluted and environmentally degraded. It created the perfect opportunity for China's first industrial park. Rather than remove and erase the history of heavy machinery, docks, and other industrial structures on the site, they were recycled and repurposed into new educational and aesthetic elements of the park. This creates a link to the past. The Zhongshan Shipyard Park is important in China because it was the first demonstration of how landscape architects can create environmentally friendly public places full of cultural and historical meaning on former brownfield sites in China.

The park is completely contrary to the classical Chinese notion of a garden. Since it opened in 2002, the park has become an focal point for the local community, and a tourist attraction. The Zhongshan Park has been open to the common people since it opened, regardless of time of day or year. It has become a favoured site for wedding photographs, and has become the site of cultural events. Kongjian Yu reused many elements that he found on the site. Water towers became focus pieces. Shipbuilding structures became giant red steel skeletons. All original existing elements were carefully incorporated into the design. The design of the park itself demonstrates to the common people how landscape architects can turn a polluted site into a beautiful, meaningful and functional place. It also illustrates how design can play a role in urban renovation. Existing native vegetation and original wildlife habitats were preserved in the new design. New plantings were introduced, but only native plant species that would be found on the site were used. The ecological principles of reducing, reusing, and recycling natural and man-made materials has been followed. Existing structures have been repurposed, and former industrial hardware has been given new use.

Figure 107: Native plant species clean water on site.

Figure 108: Industrial heritage features are preserved.

Planting Features
- Dynamic discovery landscape
- Area open for public use, mixture of open and sheltered spaces

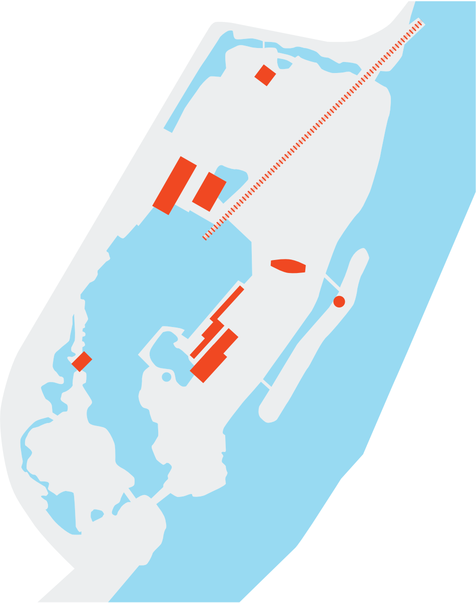
▨ **New Island**
- Mediates flood damage to site
- Saved and preserved existing established ecology on site

Repurposed Buildings
- Recycled existing buildings
- Former industrial structures restored and repupose d

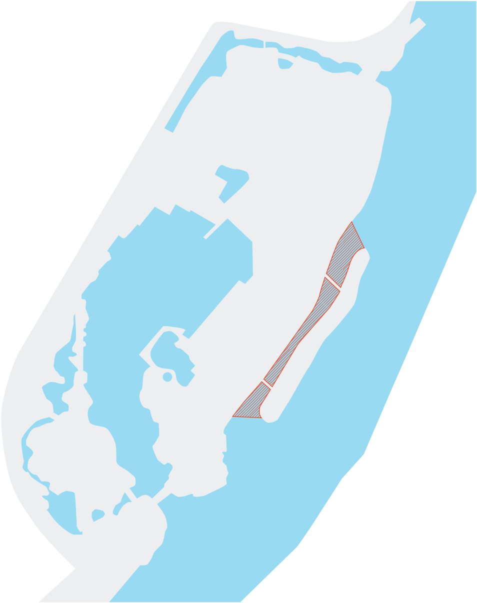
Open Public Space
- Open community space for events
- Area always open eg. festival, special events

New Circulation
- Creates connections throughout site
- Aim use towards creating connections to native habitats

Former Industrial Railway
- Creates new path with a connection to industrial past
- Preserves histroic geometry



Industrial Heritage Preserved
- Physical structures, infrastructure and floating elements are repurposed
- Deployment of industrial artifacts establish a new kind of heritage park



Waterfront Ecology
- Native plant species were employed to remediate the shoreline from industrial era
- Once heavily polluted, the natural ecological system has been triggered to regenerate itself

Park Paths
- Establish new circulation system and connections to ecological territories
- Creates identity and place finding within new park

Planting Schedule
- Native species reintroduced to site to assist in regeneration and ecological improvement
- Different planting strategies at different parts of site creates different location identities

Figure 109: Zhongshan Shipyard Park, before

Figure 110: Zhongshan Shipyard Park, after

Downsview Park
Toronto, Ontario
Bernard Tschumi (2000)

Cornwall Waterfront
2 km^2

Downsview Park
1.3 km2

Part of the Design Competition for Downsview Park, Bernard Tschumi Architects and Derek Revington Studio created a proposal named 'The Digital and the Coyote'. The competition was for the creation of a new National Park on the former site of Downsview Airport, in north-west Toronto. As Canada's first national urban park, the park was to combine public use with natural ecology.

Recognizing the uniqueness of the site, located between two of Toronto's watersheds, and housing an active research aerodrome, Tschumi and Revington sought to create a new form of park, one based on the notions of fluidity and digital sensibility.[158] The technology of the 21st century has redefined the citizen's idea of what a park is, nature, and recreation. There no longer can be wilderness when one is connected.

To confront this contemporary reality, Tschumi and Revington reduced the park's program to two elements, the digital and the wild.[159] These seemingly opposing ideas are confined on the site, and forced to mix, producing new and unexpected outcomes. The results illustrate how rather than work in opposition to one another, the digital and the wild create new positive opportunities for both recreation and ecology strategies.

Figure 111: Downsview Park, 2013.

The proposed Downsview Park was located on the site of a former military air base. Much of the site was to become Canada's first urban National Park, while the airstrip and much of the infrastructure was to be retained for Bombardier, to test aircraft. Tschumi recognized this site as neither a theme park, nor a wildlife preserve. This was an untraditional site. The proposed Downsview Park is located in urban North York, between two of Toronto's watersheds, the Don Mills River and the Humber River. Combined with the advanced military technologies existing on the Downsview Park site, Tschumi recognized that these technologies and watercourses spoke to a fluid sensibility. With a large part of the site to remain for advanced aerospace testing and research, Tschumi's proposal recognized the influence of contemporary technology. Tschumi argues that the role of information and technology on society in the twenty-first century has produced a world where regardless of location, our ability to connect produced an urban landscape regardless of location.

Tschumi's proposal purposefully confronted the two realities of the site, what he termed as the digital and the wild. These two notions at first seem to be opposed, but Tschumi's proposal purposefully sought to see how far the two elements could be made to permeate one another. This is carried out by a spatial organization strategy focused on attracting and seducing users. To activate the existing structural artifacts on the site, the former industrial and military infrastructure of the former air base, the proposal called for large screens to be attached to the existing buildings. This would create a common identity of the structures on the site. Many of the new programmatic events would take place in these existing buildings. The image-screens, installed at various intervals, would seduce visitors. Creating a place for cultural artifacts on the site was handled by the proposal of a cultural campus on the east-west axis in the centre of the site. Tschumi called these spools, 'basins of attraction'. The spools create a site for programmatic activities ranging from sports, education, and mass events. They also permit another form of interface between the digital realm and the natural.

The fluidity of digits is meant to maximize the length of the perimeter. Similar to interlocking fingers of opposing hands, the fingers of nature act as a boundary for the park. The nature fingers are to become natural artifacts of the site, and interlock with proposed cultural fingers. Altogether, the digits, spools, and screens were employed as the major physical and spatial means of organizing and activating Downsview Park. Tschumi's proposal for Downsview Park is notable for its employment of time, rather than spatial properties, as the primary agent of forming the project. Successional models are proposed, rather than simply initial plantings. The initial phase, a phase one five year site plan, employs the planned digits to create a defined field for the park. The centre of the site, the existing buildings via the screens begin to generate the spools. The spools are formed in the space between the digits and the existing active centre. Tschumi's Downsview Park proposal creates the theme of the digital and the natural. By the final phase of the project, phase three, the elements of the park are to be connected together. The screens, spools, and digits connect together and flow through their boundaries into each other. The proposal recognized that there exists a strangeness that envelopes the Downsview Site. Having been a former air base, this was not part of the public realm, quite the opposite. To become a public space, the Toronto public would have to become familiar with this site. Tschumi's intention was not to domesticate the site, but rather to heighten and intensify this by regenerating a new and unpredictable wilderness.

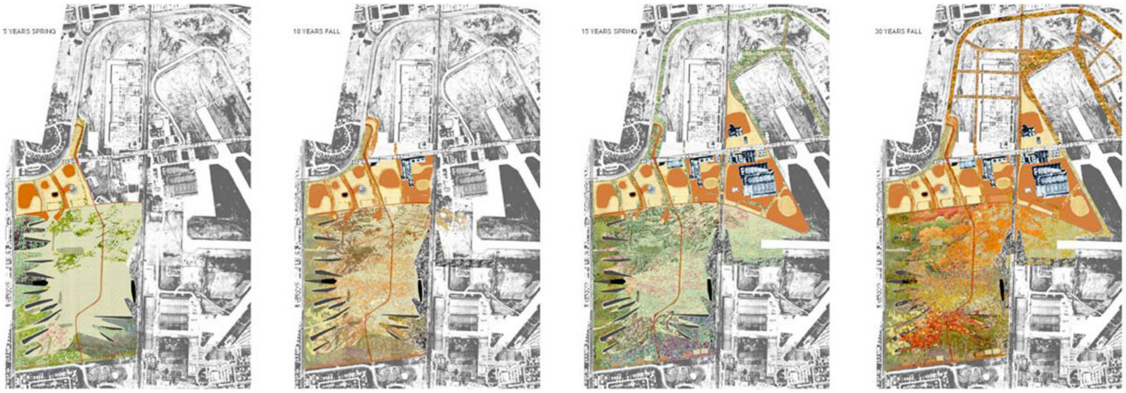
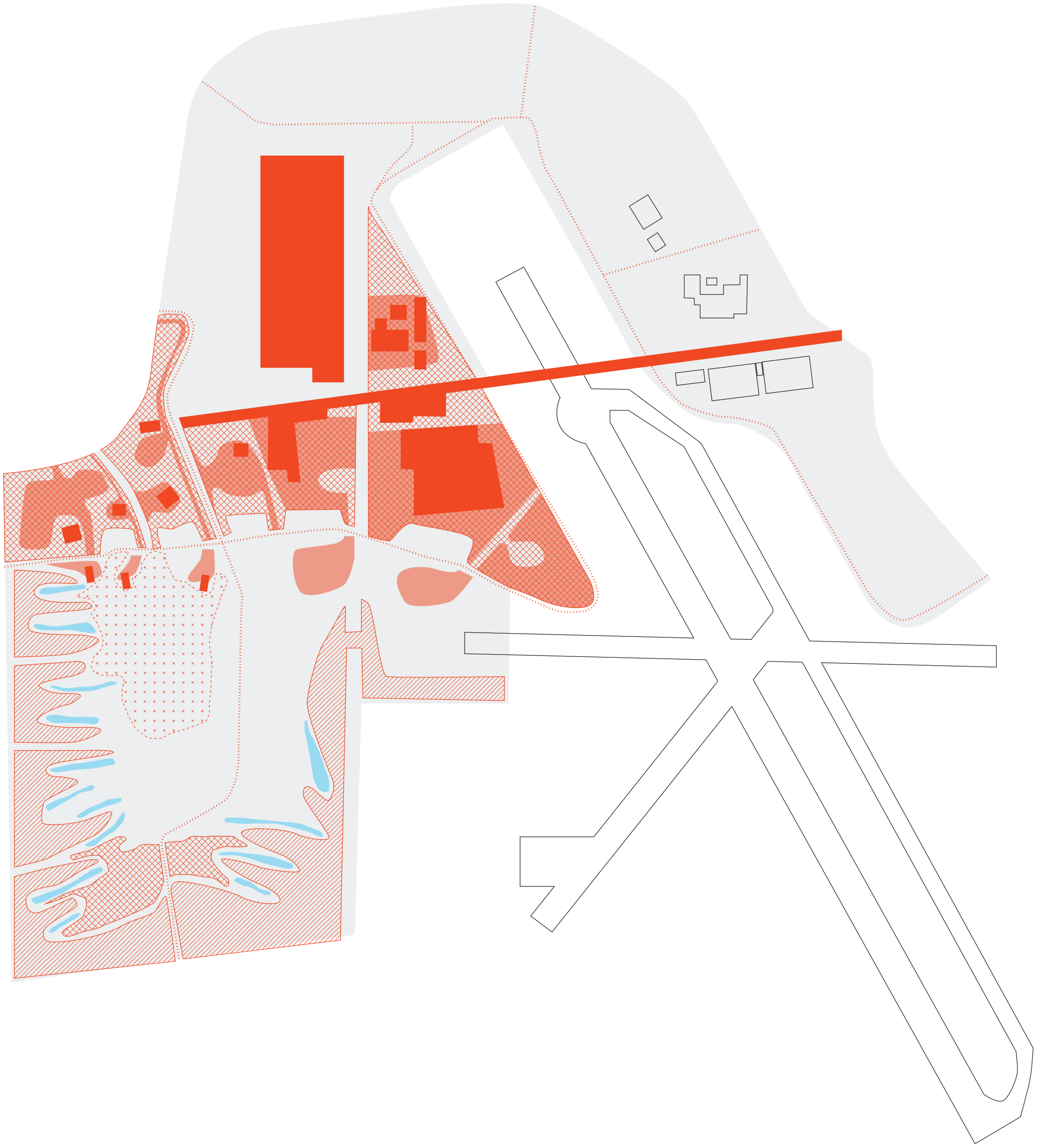


Figure 112: Diagram of Phases, 5-20 Years.



▩ **Closed Pioneer Fields**
- Not open to public
- Area enclosed
eg. housing, school gardens

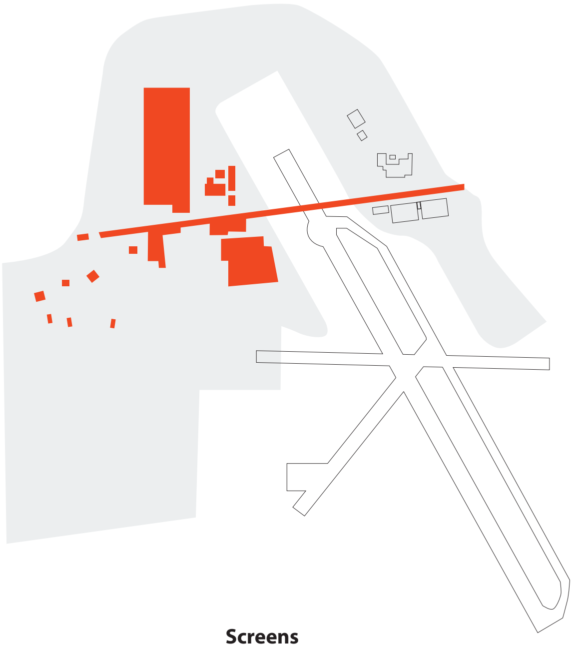
▨ **Partially Open Pioneer Fields**
- Temporary public offerings
- Area enclosed
eg. flear market, open air theatre

⠿ **Open Pioneer Fields**
- Open public offerings
- Area open
eg. cafe, youth club

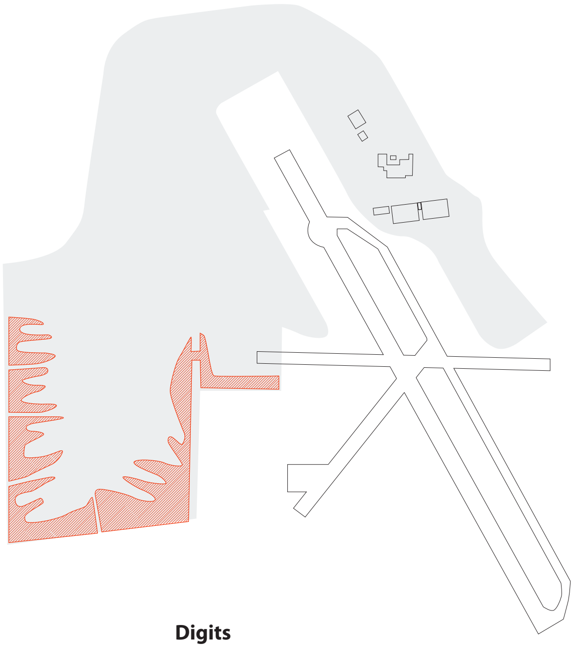
░ **Action Space**
- Open community space for events
- Area always open
eg. festival, special events

■ **Development Focus**
- Initial concentrated public offerings
- Aim use towards future development
eg. new city district

▙ **Single Locations**
- Re-use of buildings
- Converted to pioneer uses
eg. gallery, sports club

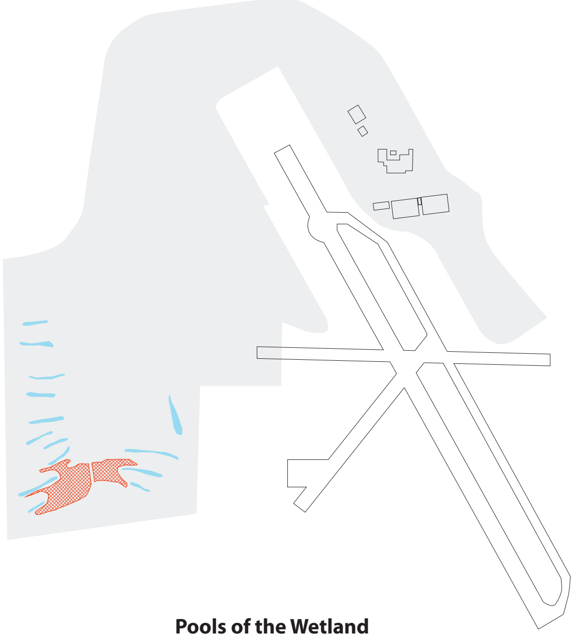


Screens
- New and old buildings repurposed
- Create an ever changing cultural landscape



Digits
- Fingers of nature that maximize perimeters
- They increase interface between natural artifacts and cultural ones

Spools
- Basins of attraction for public events
- Permit a further interface between the digital and the wild



Pools of the Wetland
- Where digits interlock, wetlands are formed
- Fluvial voids enter the wild and then filter water within the wetland pools.

"A tactic insinuates itself into the other's place, fragmentarily, without taking it over in its entirety, without being able to keep it at a distance. It has at its disposal no base where it can capitalize on its advantages, prepare its expansions, and secure independence with respect to circumstances. [...] On the contrary, because it does not have a place, a tactic depends on time —it is always on the watch for opportunities that must be seized "on the wing." Whatever it wins, it does not keep. It must constantly manipulate events in order to turn them into "opportunities.""[160]

Michel de Certeau, The Practice of Everyday Life

Tactical Urbanism

In the early 2000s, a new movement in urbanism began to formally emerge, this new movement was in direct response to the perception of citizen's role within the contemporary city. In a era of ever-greater social connection through technology, citizens began to recognize that their immediate needs in the built environment could only be expedited by their own agency. These citizens seized the role of initiators of local public improvements outside the official traditional urban planning system. Citizens since the earliest communities have employed agency to improve their environment, and the recent cultural revolutions of the 1960s saw rise of activist agency in the city. As an emerged formal movement, Tactical Urbanism has rejected the role of planning boards, urban planners, and the costly consultants that municipal councils have come to rely on.

It is critical to gain an understanding of power and authority within the city's spatial structure to understand the emergence of Tactical Urbanism. Kim Dovey in her publication Framing Place, argues that an outcome of authority in the context of architecture and urban design is the rise of power over others and the means to control their actions.[161] In regards to the production of spatial structures, two elements that Dovey traces to the power over others have severe consequences for the city.

These two elements are force and authority. The deployment of force removes all agency from the subjected, and authority uses institutional systems to justify the ends it seeks.[162] Concerning the city, the administration of power comes in the form of a hierarchical structure,[163] the incorporated municipality. This hierarchical structure exerts force and authority on the physical city. This relationship is problematic as the physical city is formed as a reflection of the civic landscape, more similar to a network of interconnectivity than a hierarchical structure. This results in a citizen who is a critical part of the city and the civic landscape, but has been suppressed of agency.

Despite this existing condition of subjugation, Tactical Urbanism has seen the local citizen skip the red tape of city hall, and immediately engage with their immediate built environment. These actions have often been illegal, and without permission, but always with the intent of improvement. These particular actions range from guerrilla gardening, to repurposing abandoned lots, from painting crosswalks to unapproved physical constructions. A result of these grass roots, bottom up efforts, Tactical Urbanism is an agile response to the needs and requirements of the local condition. These agile efforts are a response to small scale matters that are often absent in traditional planning methods or control bylaws of the city. These unsanctioned actions have begun to become sanctioned and legitimized as bureaucrats have recognized that the low risk, low cost experiments have the ability to improve the city, and strengthen connections within the community. In this deployment, Tactical Urbanism is a low impact, low cost method to test and experiment with new civic improvements. The social capital produced within communities through Tactical Urbanism interventions are a marked improvement over traditional planning exercises. Citizens engaging with Tactical Urbanism strategies, sanctioned or not, hold the greatest promise for the role of the citizen within the civic landscape since the rise the of control bylaws and the establishment of the planning profession.

Origin

Tactical Urbanism is a formal movement that encapsulates experimental interventions undertaken within the public realm with the intent of experimenting with the built environment. In 1933, CIAM IV produced the Athens Charter, that established Modernist city planning principles that saw rise to what is today the traditional planning industry. These modernist planning principles saw the separation of human activities into three main spheres of action: dwelling, work, and leisure, all at a physical distance to each other linked by circulatory infrastructure.[164] In 1946, Le Corbusier published "Looking at City Planning". Reflecting on the city for the machine age, Le Corbusier stated that "The city planner organizes architectural space, determines the place and purpose of the containing vessels which are built, and links all these things in time and in space by a circulatory network."[165] The Modern project of urban reform attempted to create a perfect mechanism through the separation of activities.[166] Place was merely containing vessel, and purpose the awaiting program to fill the vessel. The city that has been produced by this method is definitively different from the city envisioned by the Athens Charter. There has been one major unforeseen outcome produced by this method. The strategy of urban planning that began with the Modernist has negated the role of the citizen within the city.

The approach of treating the elements of the city as simply containing vessels has resulted in city planners and public leaders that are ever more frequently preoccupied with making large-scale, transformative changes in the built environment.[167] This has occurred at the detriment of the small-scale condition. This inability to engage in the small-scale, micro changes in the built environment has produced a crisis within the city. The Street Plans Collaborative argues in the introduction of their publication Tactical Urbanism, "In the pursuit of progress, citizens are typically invited to engage in a process that is fundamentally broken: rather than being asked to contribute to incremental change at the neighbourhood or block level, residents are asked to react to proposals that are often conceived for interests disconnected from their own, and at a scale for which they have little control."[168] This is an outcome of an approach to city building in a society of consumption that places those in a position of authority above those who have been marginalized. The citizen as a consumer is marginalized within the urban space by the contemporary spatial system.

Emergent Theory

In his 1984 publication, The Practice of Everyday Life, author Michel de Certeau argued that in a productivist economy, marginality is not limited to minority groups, but is rather pervasive, resulting in a unreadable cultural activity of the consumer.[169] Speaking specifically on contemporary spatial practices, Certeau states that presently there is a contradiction within spatial practices concerning the collective mode of administration and an individual mode of reappropriation.[170] The outcomes and conflict of this contradiction has an immediate impact on determining the conditions of social life.[171] The substance of everyday life is therefore a product of poaching and intruding on the determined territory of an administration, of whose structures and rules are meant to define everyday life. Everyday life is therefore tactical, as it is influenced, yet is never absolutely defined, in territory outside of the control of the individual citizen.

Peter Lang, in his paper, "Urban Activism and the terrain vague", links the 1989 emergence of globalization and the 1990 Italian Government attempts to privatize higher education as a catalyst that saw a radicalization of students in the discipline of architecture in the city of Rome.[172] Unwilling to accept the usual academic indoctrination, a process of re-education took place that resulted in architecture being released from its elite self-referential framework and steered towards a more inclusive condition open to change and mutation.[173] The students rejected the prevalent idea within schools of architecture at the time which considered the urban voids of the city as nothing more than blank spaces on the map, disconnected in space and time from the city.[174] The student activists developed new working strategies with the intent of engaging Rome's abandoned landscapes, fallow urban sites in the heart of the city that had virtually disappeared from the catalogue of popular urban spaces.[175] The regeneration of these sites offered the first opportunities in the creation and management of alternative approaches of temporary habitation.[176] Engaging with Rome's least known urban territories, including abandoned areas, destitute properties, terrains vague, partly completed underground tunnels, and upturned roadways, the students developed a new formal method of fieldwork tactics to produce places, environments and situations. They recognized that their actions in and of themselves were part of a broader interrelated system of process.

What is Tactical Urbanism?

The radicalized architecture students exploring and investigating the undefined territories of Rome originally resisted any kind of intervention on these sites. Aldo Innocenzi, one of the students involved in the founding of the movement put it thus, "Well, we don't want to produce anything, its enough that we have found these unconsciously produced landscape [..] The theme of production we haven't yet confronted in these terms, because we don't know what we want to produce; Our production is the event, the discovery of new territories."[177] The students were uneasy with inserting constructs or interventions on a seemingly empty map, as the blank space on the map was merely a failure to recognize an existing condition of the site. The existence of these sites, seemingly outside the designated site of administration, is proof of their autonomy which makes intervention difficult. This resistance to intervention would soon subside as new needs emerged.

Tactical Urbanism as a formal movement would soon become defined by intervention and agency. The citizen who undertakes the intervention, the agent, employs tactics through negotiation and deliberation which ultimately results in empowerment.[178] Interposing in the established power structures of space, intervening through Tactical Urbanism takes on a political and ethical meaning. Mirko Zardini in his paper "A New Urban Takeover" argues that the city has lost its power of resistance due to contemporary economic and social systems, arguing that "This metropolis is in fact no longer the expression of a society of producers but of consumers."[179] Today the leisure time envisioned by the members of CIAM has turned solely into consumption within the productivist system. This large shift within the capitalist society has had profound effects on our spatial systems that form the city, and altered the citizen's view of the city, and their place within it. The contemporary urban planning profession and the industry of architecture have almost wholly embraced this world of consumption. This has produced cities made of up communities of apathetic citizens.

The outcome is evident. Social and economic imbalance within the city are rife. Experience has revealed the absentee role of ethics within the architectural education. In 2004, American Architect and social activist Samuel Mockbee argued "The architect's primary emotional connection should always be with place, and not just the superficial qualities of place, but the ethical responsibility of shaping the environment, or breaking up the social complacency and energizing one's community."[180] This notion is absent in the industry of architecture, arguably contributing to the deterioration of the contemporary civic landscape. The deterioration of the civic landscape produces a crisis of meaning for the individual citizen. This crisis of meaning is accompanied by a decline of that individual citizen's ability to do or make.[181] The inability to do or make manifests itself in the common characteristics of apathy and malaise found in contemporary communities.

Today, the spatial system of the city is defined solely by the administration of authority. In the era of strident rules, regulations, and bylaws, tactical methods have begun to emerge with the goal of intervention. This is a form of resistance to authority. With increasing occurrence, individual citizens have inserted themselves into the spatial system that forms the city. These tactics see the citizen engage with urban environment outside of the official formal system of administration. Mirko Zardini on the issue of the emergence of these citizen agents argues "What is needed is a shift from the passivity in which we comply with what is offered up every day, to an active posture, not so much of resistance, but of a quest."[182] This is a natural shift following the degradation of the civic landscape. The city should be a reflection of the community, not best practices of the planning profession. Giovanna Borasi in his paper 'City 2.0', argues for the replacement of the urban planning doctrine of the three functions of working, sleeping and eating, for the four particular actions that define out everyday activity, walking, playing, recycling, and gardening.[183] These actions, while not obviously part of our daily realm of activities, hold the greatest opportunity for re-imagining our cities and create new methods to create it. Rather than negate the citizen's role in the city to a public input at an official hearing on a scale that exceeds that of the individual, Tactical Urbanism places the instrument of change in the hands of the individual citizen with a great emphasis on personal involvement. The produced interaction of individuals on the smallest of scales strengthens communities and holds great promise for the future of the city. This focus on empowerment is quite contrary to the existing system to control and authority. Borasi argues "Bottom-up proposals and ideas contribute to defining a new way of thinking about many aspects of our daily lives are explored, often in the first person."[184] The existing system deploys a top-down strategy that is incapable of defining a contrary method. They were introduced with the intent of control and are unlikely to relinquish authority. The multitude of outcomes and opinions produced through Tactical Urbanism are completely absent within the contemporary urban planning profession. Born of necessity, a change in urban space-making has begun. These citizen agents, emerging from a period of repression, have risen to the task of making the city once again in their own image. The emergence of Tactical Urbanism holds the promise that once again the city, a product of the community and the civic landscape, can take on the potential of limitless opportunity.

Central Delaware Waterfront

Philadelphia, Pennsylvania

Penn Praxis (2006-)

Cornwall Waterfront
2 km^2

Central Delaware Waterfront
4.45 km^2

The history of settlement in Philadelphia dates back over three hundred years. The original founder wished to create a settlement that was situated with a diverse nature. Philadelphia was settled on the low banks of the Delaware River where streams and marshes were plentiful.

As the first capital of the United States, Philadelphia quickly became a centre of manufacturing. With the rise of the industrial era, Philadelphia progressed to a settlement with an emphasis on production and industry. The natural artifact of the original settlements creation, the riverfront, became its greatest asset. The waterfront produced vibrant riverfront ports, with an inexhaustible access to transportation. With a growing population, the settlement was a place of capital and employment. It was said that Philadelphia was the muscle behind the brains and the money, respectively Washington and New York. As industrial sites began to find themselves without industries in the later half of the 20th century, Philadelphia's waterfront has been marred with brownfields and abandoned docks. Philadelphia has now emerged as a centre of industries of a service economy, but the waterfront remains critical in the community's identity. The disappearance of waterfront industries has left behind a great potential to create a balanced waterfront for the 21st century.

Penn Praxis produced the 'Action Plan for the Central Delaware' in 2006-2007. They interviewed and connected with thousands of citizens to gain insight and thoughts on their opinions concerning any future waterfront development. Penn Praxis took the position that typical development was steered by government authority and speculative capital. Recognizing that this did not reflect the needs of the citizens of the city, Penn Praxis charged themselves with protecting the best interest of the public. By interfacing with the private interests and government agencies, Penn Praxis represented the interests of typical citizens.

Figure 113: Central Delaware Waterfront, 2013.

Penn Praxis produced 'A Civic Vision for the Central Delaware' in 2006-2007. By the completion of the study, nearly four thousand Philadelphians from every walk of life had played a role and provided input on their vision for the new waterfront. Therefore the Civic Vision for the Central Delaware reflects the values, hopes, and aspirations of the people of Philadelphia. These citizens generously provided their time, energy, and passion to produce their projected hopes and expectations for tomorrow's waterfront. The ongoing public conversation about the future of the Central Delaware, and the city at large has invigorated Philadelphia's civic landscape. Rather than suppress the undirected public's perception and ideas, the city of Philadelphia has invited everyone to the table to have a say. The Penn Praxis 'Action Plan for the Central Delaware' established ten objectives to be completed between 2008-2018. These objectives reflect easy, and difficult goals that are to improve the Philadelphia waterfront.

Throughout much of Philadelphia's history, the Central Delaware River waterfront was the front door of the city. The new master plan seeks to reconnect the city with this natural artifact. The central Delaware Riverfront is unique in the sweeping and gentle bow of its geography. A landscape of shorelines and piers, the nature of this distinctive condition permits views of the riverfront from any location along the riverfront. The natural ecologies have been placed under threat. The former industrial sites along the riverfront have mostly become brownfields. These sites and infrastructures offer great opportunities for a revitalized waterfront. Philadelphia long considered itself an industrial workhorse. Retaining this legacy, Philadelphia is rising to the goal of leading the nation in creating a walkable and more equitable city focused on a resilient waterfront.

The goal of this action plan is to define concrete, doable actions needed to redevelop the river over the next ten years in agreement with the civic vision. This was ordered and signed by the Mayor of Philadelphia. Incorporating existing efforts along the waterfront is critical in creating a vibrant resilient master plan. Existing sites play a critical role in providing a role of understanding for the public as to the importance of the port and its maritime history. Former industrial use of the waterfront severed the city from the waterfront. The new master plan identifies that planned approaches must be created to re-establish these connections to the Central Delaware Waterfront. With a focus on improving access from adjacent neighbourhoods to the waterfront, these cultural corridors to the nearby vibrant neighbourhoods are to provide secure pedestrian and bicycle passage to the new waterfront. Uses that do not fit well together will have transition zones between them. The land-use plan has been created with this in mind and seeks to minimize these conflicts of program. The public overwhelmingly called for the creation of a 4.8 mile waterfront trail that stretches along the riverfront would accommodate all types of public use, from walking to biking, and would encompass the entire riverfront.

Zoning commission's code conundrum
BY MATT BLANCHARD | SEPTEMBER 12, 2007
Different takes on how to tackle reform. **Comprehensive** plan doings? Zoning **workshops** set for commissioners, public.

O'Brien and Keller take on casino process
BY JOHN DAVIDSON | SEPTEMBER 11, 2007
Gaming oversight committee hears two of its members challenge government, Foxwoods and SugarHouse on riparian rights, traffic, buffer zone.

Meet the new zoning reformers
BY KELLIE PATRICK GATES | SEPTEMBER 6, 2007
Q&As with members of the recently formed Zoning Code Commission. First meeting **coverage**. Why **reform**?

Cars and people can co-exist
Parking problems and solutions resonate wit residents on the Central Delaware Waterfront. Read Praxis **guidelines**.
By Andrew Goodman for PlanPhilly

September 13th, 2007
Germantown-Wayne Junction Community Visioning Workshop

September 20th, 2007
Central Delaware Advisory Group meeting (tentative)

September 20th, 2007
Infill Philadelphia publication launch party

September 26th, 2007
The Philadelphia Zoning Code: an overview

See all Upcoming Events

Join the Conversation!

Sign up to receive updates

Voice your opinion

Be a citizen journalist

Letters

STAY INFORMED
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IN YOUR NEIGHBORHOOD
--Select Neighborhood--
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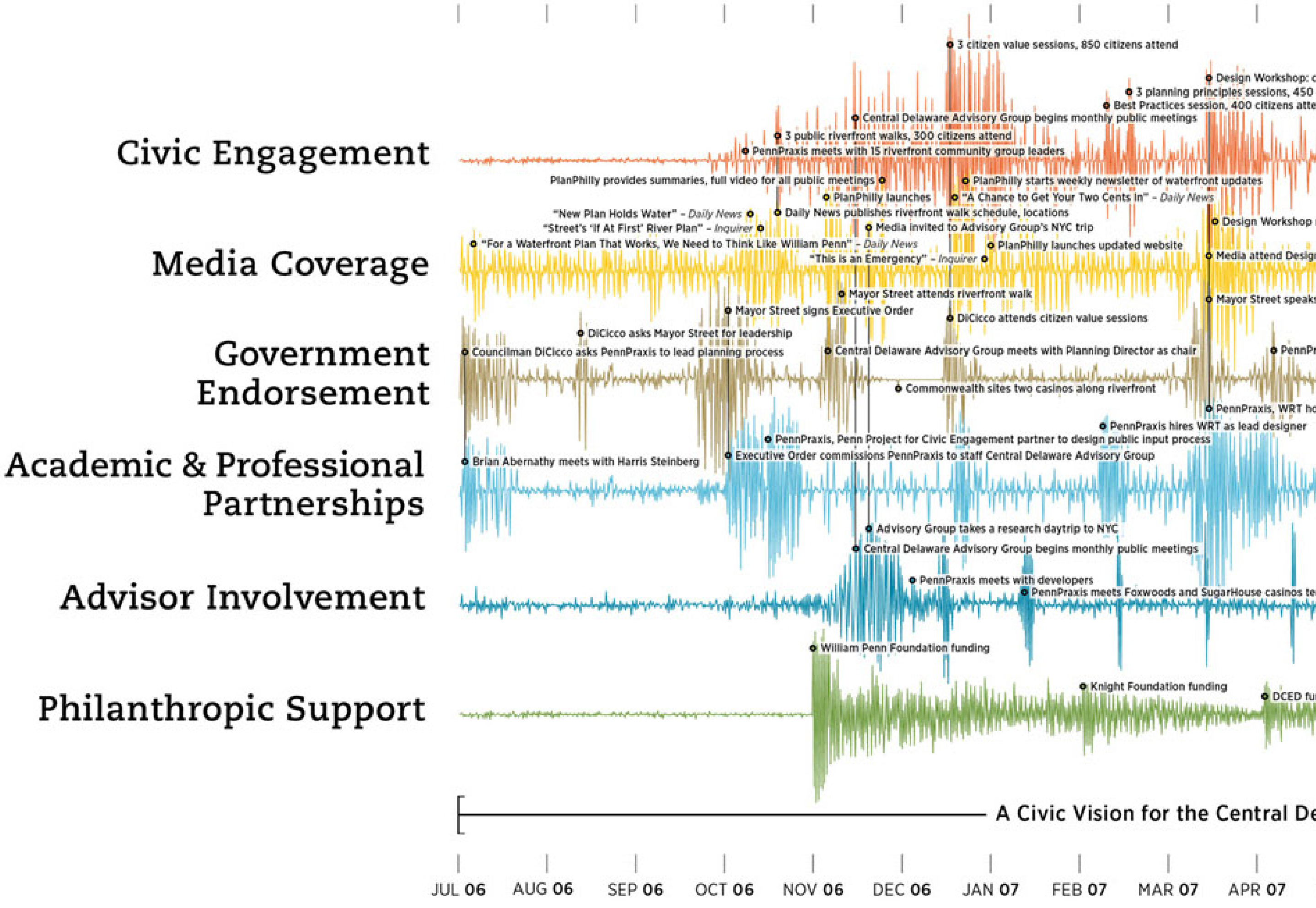
PlanPhilly in the Press
- The circle forms and breaks again
- The Next Mayor: waterfront focus
- Inquirer: Waterfront planning

Articles
- Coming soon: a citywide comprehensive plan?
- Low-down on high-rise hopes
- Zoning Code primers scheduled

Commentary
- Inga Saffron: sidewalk brawl in South Philadelphia
- Steinberg: 10 steps to a better waterfront
- Start by pondering the problem

Figure 114: PlanPhilly website promotes public engagement.


3 citizen value sessions, 850 citizens attend
Design Workshop: c
3 planning principles sessions, 450
Best Practices session, 400 citizens atte
Central Delaware Advisory Group begins monthly public meetings
3 public riverfront walks, 300 citizens attend
PennPraxis meets with 15 riverfront community group leaders
Civic Engagement
PlanPhilly provides summaries, full video for all public meetings
PlanPhilly starts weekly newsletter of waterfront updates
PlanPhilly launches
"A Chance to Get Your Two Cents In" – Daily News
"New Plan Holds Water" – Daily News
Daily News publishes riverfront walk schedule, locations
"Street's 'If At First' River Plan" – Inquirer
Media invited to Advisory Group's NYC trip
Design Workshop
"For a Waterfront Plan That Works, We Need to Think Like William Penn" – Daily News
PlanPhilly launches updated website
Media Coverage
"This is an Emergency" – Inquirer
Media attend Desig
Mayor Street attends riverfront walk
Mayor Street speaks
Mayor Street signs Executive Order
DiCicco attends citizen value sessions
DiCicco asks Mayor Street for leadership
Government Endorsement
Councilman DiCicco asks PennPraxis to lead planning process
Central Delaware Advisory Group meets with Planning Director as chair
PennPr
Commonwealth sites two casinos along riverfront
PennPraxis, WRT ho
PennPraxis hires WRT as lead designer
PennPraxis, Penn Project for Civic Engagement partner to design public input process
Academic & Professional Partnerships
Brian Abernathy meets with Harris Steinberg
Executive Order commissions PennPraxis to staff Central Delaware Advisory Group
Advisory Group takes a research daytrip to NYC
Central Delaware Advisory Group begins monthly public meetings
PennPraxis meets with developers
Advisor Involvement
PennPraxis meets Foxwoods and SugarHouse casinos te
William Penn Foundation funding
Knight Foundation funding
Philanthropic Support
DCED fu
A Civic Vision for the Central De
JUL 06
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MAR 07
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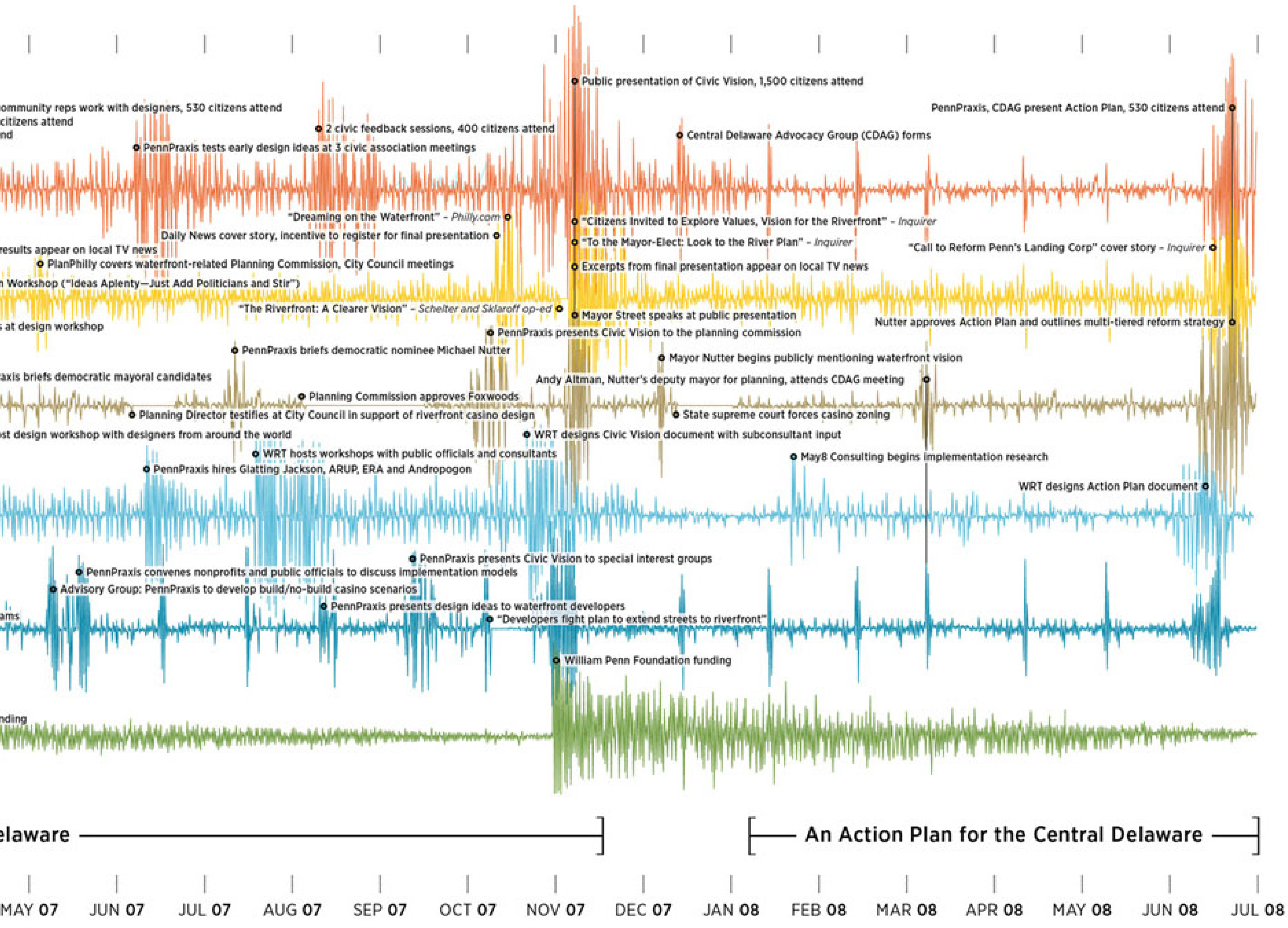


Figure 115: PennPraxis' Public Design Strategy

🟩 **Existing Parks**
- Historic city parks
- Established neighbourhoods

🟩 **New Waterfront Parks**
- New waterfront public space
- Catalyst sites for adjacent developments

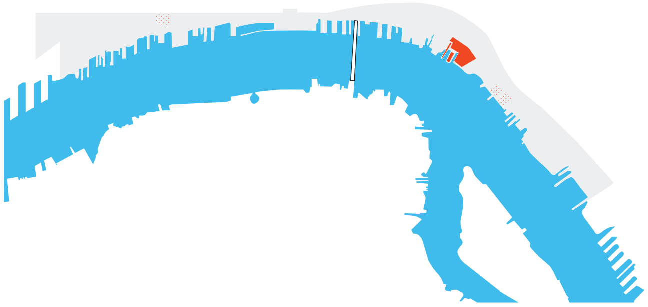
▨ **Residential Focus**
- Establishment of new neighbourhoods
- Creating a populated waterfront

/ **Cultural Corridors**
- New connections between new waterfront spaces and existing neighbourhoods and parks

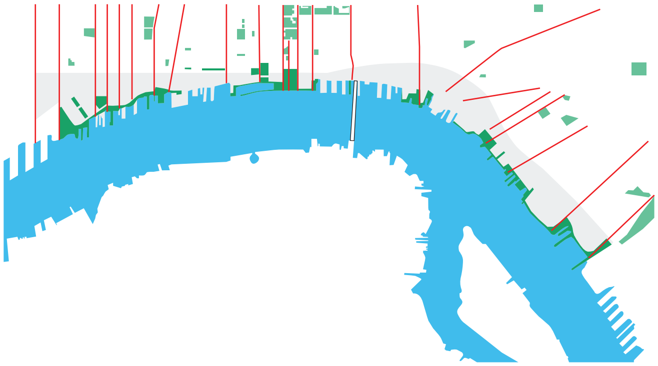
🟥 **Mixed Development Focus**
- Public consultation wanted a active waterfront
- Work and live on the new waterfront

░ **Institutional Focus**
- Program to establish new communities
- Strategic deployment of program on contaminated sites

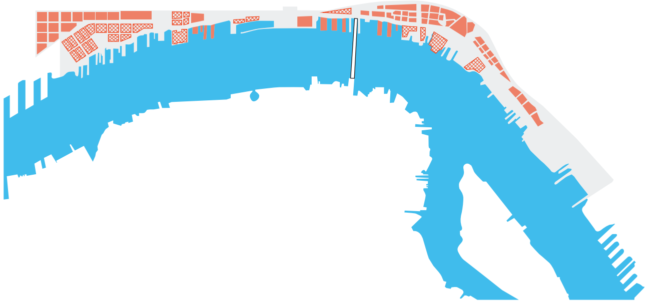
Public Green Waterfront
- Public consultation indicated the demand for public waterfront parks
- Preserves as much waterfront for public use as was possible



Top Down Program
- Civic institutional space to assist development
- Casino site as a catalyst for leisure and recreational program on the historic waterfront



Cultural Corridors
- Established rich neighbourhoods exist beyond the former industrial waterfront, their connection to the new waterfront was recognized as paramount



Public vs. Private
- Public consultation wanted a public waterfront
- Public needs were confronted with the reality of land speculators who held private lands. Mixed-use and residential development won.

PSFS
ARAMARK
URSE

Figure 116: Rendering of designed waterfront.

Tempelhof Airport
Berlin, Germany
Raumlabor (2009-)

Cornwall Waterfront
2 km^2

Tempelhof Airport
3.86 km2

For each project, Raumlabor forms tailored teams of interdisciplinary experts.[185] Unlike previous models of planning, the local citizen is identified as one of these experts. They are the person who knows the local situation on the ground better than anyone else. These citizen specialists reveal the invisible network over every spatial situation. The crafted network between local actors and external experts reveals new areas of action and new fields of experimentation.

The model employed by Raumlabor for the Tempelhof Airport site began with the establishment of an organizational structure.[186] The second critical step was the building of partnerships. In building a park with no end in sight took the collaboration and respect of a diverse background of groups. Raumlabor did this by inviting everyone to the development and design table. [187] This is public consultation on steroids. Public hearings were replaced with sidewalk chalk diagrams where anyone could offer their thoughts.

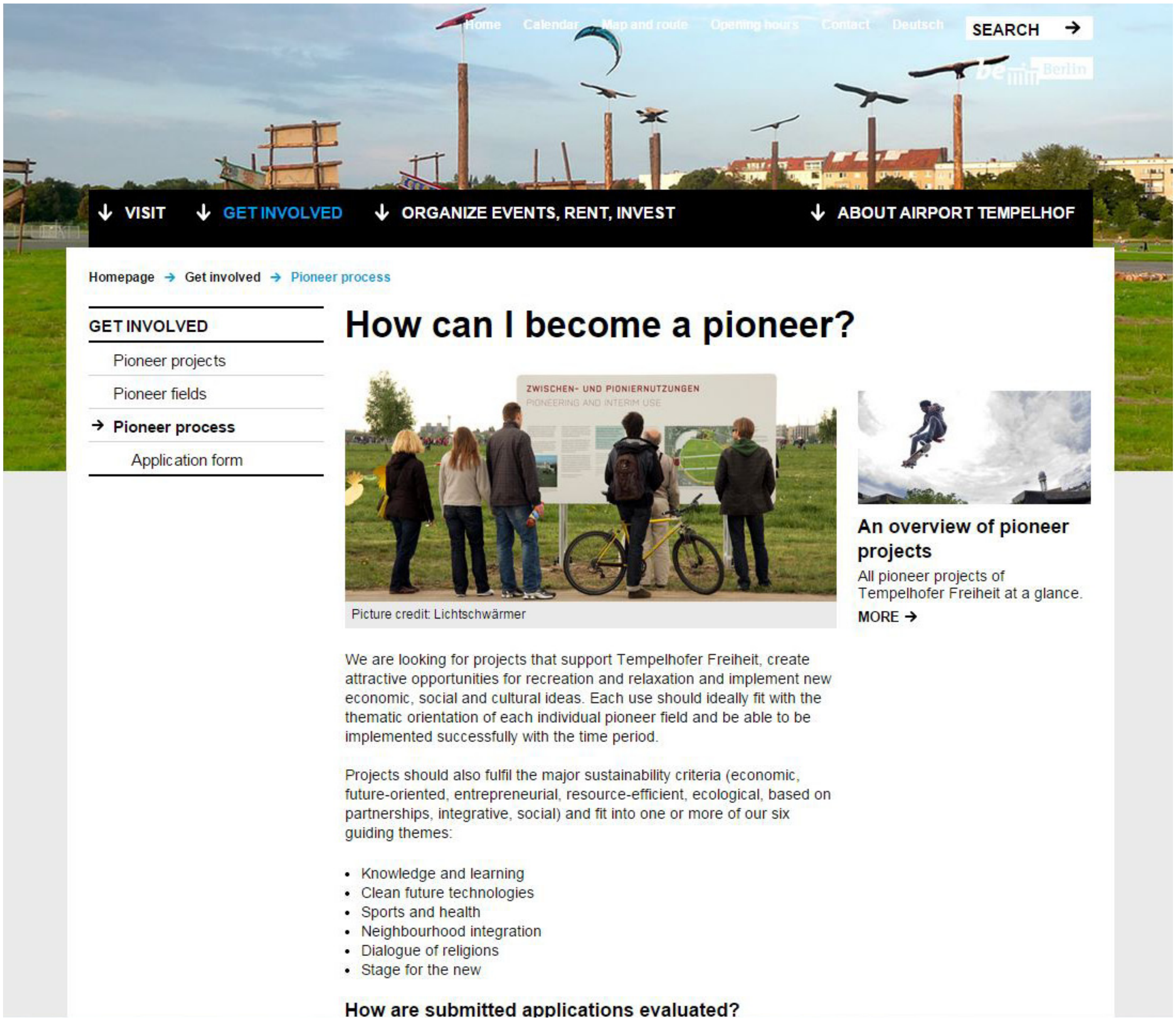
This continues today on the site with open design for the future.

Figure 117: Tempelhof Park, 2013.

Tempelhof Airport closed October, 2008. From the very beginning, there was an emphasis placed on the role of public agency in activating the site. Outside of the North American definition, these civic agents are referred to as Pioneers. The large urban site has been activated by permitting pioneers to introduce their own program on the site. Guided by a ruleset that promotes civic engagement and improvement, the pioneer fields promote the interconnection of citizens. These pioneering uses and cultural initiatives have been linked from the outset and understood as an integral part of the overall development process. The ring path is the main artery of Tempelhof Field and connects open spaces for short- and long-term activation of the site. The ring connects a combination of different action spaces, retaining a clear spatial and programmatic orientation. In the initial phase, places on the field, in the building and the periphery are activated. Highly differentiated cultural events create new ideas and images of the space. Staging events that were not intended at the place link them with the sites history. Tempelhof is deeply connected to the historical and cultural legacy of Berlin. At the public hearings it was demanded that this legacy be preserved. The connection between the site and its history, the good and the bad, are paramount.

Strategically, the Tempelhof approach puts an emphasis on generating qualitative growth. The Tempelhof framework recognizes urban development as an active, open-ended dialogue between planners and urban society. The Tempelhof Ideas Workshop developed a concept for integrated urban development. Inviting everyone to take part in the discussion, new generators and initiators of urban activity emerged as a tool for the development of the site. Pioneer and temporary uses as catalysts are to be integrated as part of the planning process. They allow for experimentation and investigation of programs. They form links to adjacent neighbourhoods and reduce operating & maintenance costs.

To meet the different levels of development pioneer fields, construction, open space development, etc. a "Dynamic Master Plan" was developed. This represents gradual consolidation of programs, networks and activities. 'Hot Spots' are locations where important connections take place. These special places - the hot spots - require defined form, integrating internal and external needs. These situations are to eventually become landmarks and beacons. The airport terminal is one of the largest buildings ever constructed, and is now open to a wide range of events and uses. Airport surfaces now incorporate a variety of uses. Outbuildings have found new purpose as part of the park. Becoming Berlin's largest park overnight is a difficult task. Beyond activating the physical space of the park, the Tempelhof framework put an emphasis on expanding the citizen's concept of the limitless opportunities the site held. 80% of the Tempelhof infield is reserved and preserved as a wildlife refuge. Certain areas do not permit human use. This large open space in the centre of Berlin provides a habitat for hundreds of protected species of birds, insects, and plants.



How can I become a pioneer?

Picture credit: Lichtschwärmer

An overview of pioneer projects

All pioneer projects of Tempelhofer Freiheit at a glance.

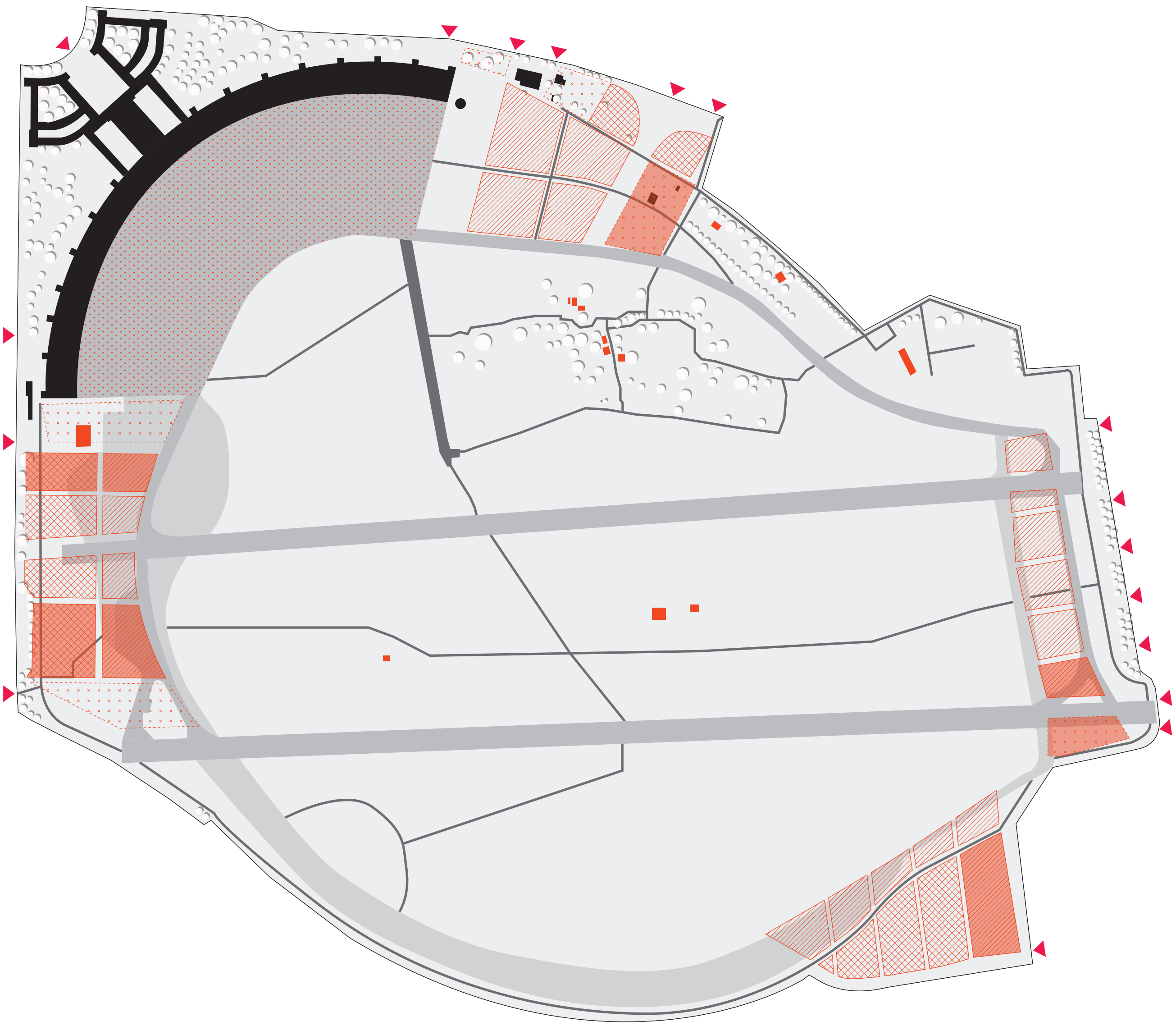
We are looking for projects that support Tempelhofer Freiheit, create attractive opportunities for recreation and relaxation and implement new economic, social and cultural ideas. Each use should ideally fit with the thematic orientation of each individual pioneer field and be able to be implemented successfully with the time period.

Projects should also fulfil the major sustainability criteria (economic, future-oriented, entrepreneurial, resource-efficient, ecological, based on partnerships, integrative, social) and fit into one or more of our six guiding themes:

- Knowledge and learning
- Clean future technologies
- Sports and health
- Neighbourhood integration
- Dialogue of religions
- Stage for the new

How are submitted applications evaluated?

Figure 118: Pioneer Program Application Website



▩ **Closed Pioneer Fields**
- Not open to public
- Area enclosed
eg. housing, school gardens

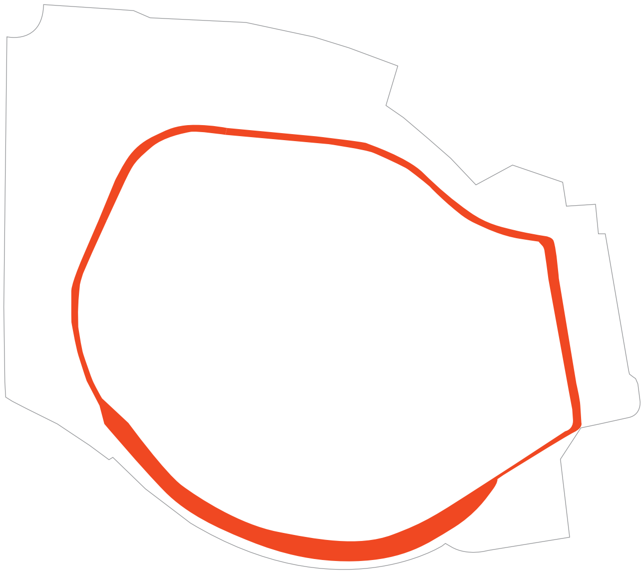
▨ **Partially Open Pioneer Fields**
- Temporary public offerings
- Area enclosed
eg. flear market, open air theatre

⁘ **Open Pioneer Fields**
- Open public offerings
- Area open
eg. cafe, youth club

░ **Action Space**
- Open community space for events
- Area always open
eg. festival, special events

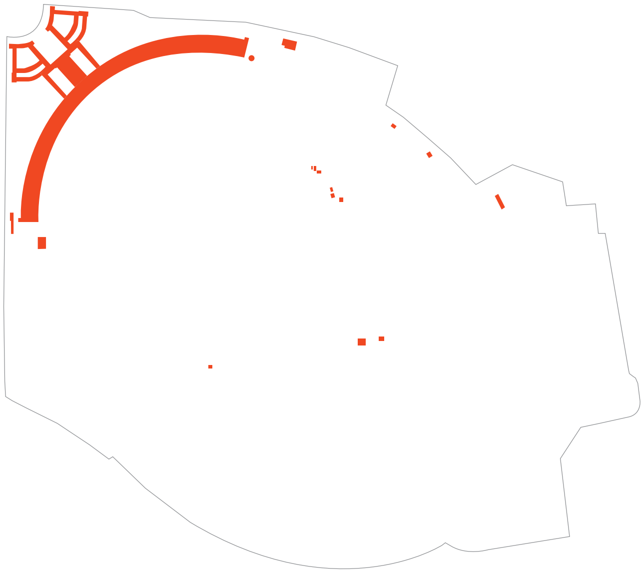
■ **Development Focus**
- Initial concentrated public offerings
- Aim use towards future development
eg. new city district

▙ **Single Locations**
- Re-use of buildings
- Converted to pioneer uses
eg. gallery, sports club

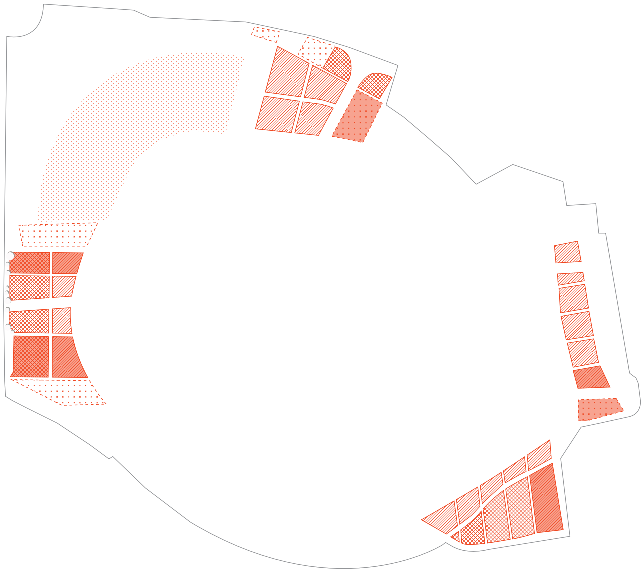


Multiple Purpose Ring Path
- Former Runway Taxi Surface
- Area open for exercise
eg. running, cycling, roller skating

Open Park Space
- Infield is preserved as open space
- Some areas preserved for wild habitat
eg. insects, bird species



Re-purposed Existing Structures
- Former Buildings as new catalysts
- Pioneer uses
eg. displays, galleries, cafe



Pioneer Fields
- Areas determined for citizen catalysts
- Grass root efforts to define space
eg. clubs, gardens, sport fields

Figure 119: Historical Wayfinding Branding.

Figure 120: Tempelhof Pioneer Fields.

Figure 121: Berlin Kite Festival at Tempelhof.

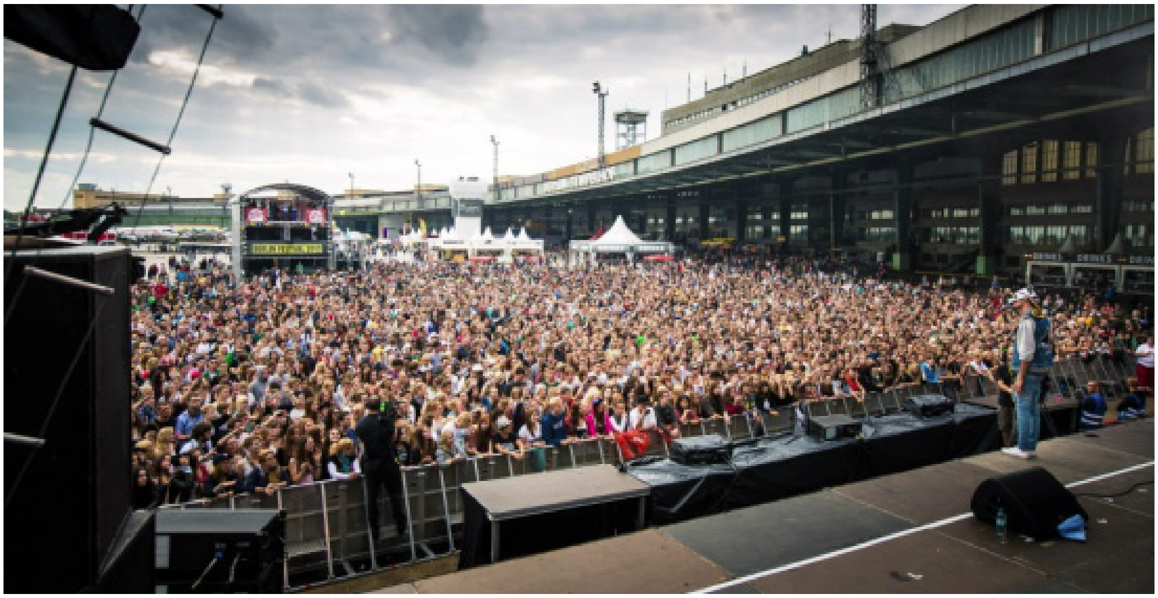


Figure 122: Cultural Festivals at Tempelhof.

DIY Urbanism:
Chair Bombing

Figure 123: Chair Bombing in Victoria.

DIY Urbanism: Park(ing) Day

Figure 124: A Park(ing) Day moment..


PAINTS

Figure 125: The street becomes a medium for public art.


Rue
Amherst
AIRES
LIBRES
Wolfe

DIY Urbanism: Temporary Pedestrian Zones

Figure 126: Temporary pedestrian space in Montreal

DIY Urbanism: Experimental Installations

Figure 127: Parking garages can become urban experiments.

DIY Urbanism:
Guerrilla Gardening

Figure 128: Blooms deployed by local residents reclaim this planter.

DIY Urbanism:
Public Reading Room

Figure 129: A popular park can becomes a public reading room.

DIY Urbanism: Pop-Up Installations

Figure 130: Overlooked infrastructure can take on a new purpose.


PIC
40
Brisbane City Council
FLIGH
HT CENTRE
PLEASE SIT ON THE GRASS

DIY Urbanism: Public Picnic Day

Figure 131: The street is reclaimed for pedestrian use.

DIY Urbanism:
Illicit Street Improvements

Figure 132: Public priority is returned to the local user.


BEER HERE
ESSLER
CREPES
theWell

DIY Urbanism: Pop-Up Markets

Figure 133: Unexpected experiences.

DIY Urbanism:
Depave Community Event

Figure 134: Public parking lots can become public parks.

agen·cy

Noun: The capacity, condition, or state of acting or of exerting power

Is the capacity, condition, or state of acting of an agent (a person or other entity, human or any living being in general) to act or exert power in any given environment.

Merriam-Webster Dictionary

"I call [it] "local authority." It is a crack in the system that saturates places with signification and indeed so reduces them to this signification that it is "impossible to breathe in them." It is a symptomatic tendency of functionalist totalitarianism that it seeks precisely to eliminate these local authorities, because they compromise the universality of the system. Totalitarianism attacks what it quite correctly calls superstitions: supererogatory semantic overlays that insert themselves "over and above" and "in excess and annex to a past or poetic realm a part of the land the promoters of technical rationalities and financial profitabilities had reserved for themselves."[188]

Michel de Certeau, The Practice of Everyday Life

Authority, Localized Agency and the Civic Landscape

Michel de Certeau in his 1984 publication, The Practice of Everyday Life, explored the role of what he called 'local authority' played within the existing productivist spatial system.[189] In a society whose cities are defined by land prospecting and capital investment, the idea of the civic landscape is negated. 'Local authority' created habitable space outside the realm of administration. 'Local Authority' created meaning and purpose through collective memory. The extermination of these 'local authorities' produced a civic landscape of apathy and malaise, marked by the indifference of the citizen.[190] Certeau argued that the negation of the civic landscape was further proof of marginalization of individual citizens in the city's spatial system.[191]

The SLS&PP was a massive, macro, top-down undertaking. It physically changed an entire landscape, converting the St. Lawrence River Valley into the St. Lawrence Seaway Valley. The physical changes that the Seaway Project produced are easy to track with maps and surveys, but the changes to the civic landscape are much more elusive. The realization of the project saw the utter extermination of Certeau's 'local authority' throughout the St. Lawrence River Valley. The promoters of technical rationalities and financial profitabilities remade the landscape anew, one that reflected their totalitarianism and authority. In the introduction, it was reviewed how the OHEC ignored the municipal approved plans produced by Wells Coates for the village of Iroquois. The Ontario Government had put OHEC in charge of the Canadian portion of the SLS&PP, and it carried out the project with absolute authority. This absolute authority would create an imprint on the civic landscape, to the detriment of the individual citizen's agency. The system of absolute authority would suppress agency in the civic landscape in a similar fashion as administrators of the productivist society suppress 'local authority'.

OHEC's primary concern was the macro design and construction of the SLS&PP. This top-down infrastructure project would come first, and little attention was paid to the micro conditions of the communities that were to be demolished and rebuilt. Despite Iroquois' origin along the edge of the river, the village was completely removed from shores of the St. Lawrence River, and found itself relocated inland along the regional highway. In the previous chapter, case studies of towns and communities along the SLRIBS indicate a region that is under performing on many fronts. These communities have struggled, caught in a malaise, since the completion of the Seaway Project, caught between the Seaway Dream and their contemporary reality. It is only now, six decades after the SLS&PP, that these communities are now beginning to reposition themselves, but the region is still caught in the expectations of an macro strategy that will deliver what the Seaway Dream failed to.

The macro, top down strategy that began with the Seaway Project has produced a condition that feels incomplete. The infrastructure was constructed, and the groundwork of modernist planning introduced, then economic realities put a stop to the project. The Modernist plans of Wells Coates in Iroquois, were to create a new city concerned with healthful, hygienic living quarters, and free time devoted to creation and relaxation subsequently dissolved into labour efficiency, and a flow of traffic that minimized time wasted between the home and workplace. The feeling of incompleteness has become the new 'local authority' of Certeau. Today the outcome for the Seaway Valley is that there is always the expectation of an end goal just beyond the horizon. Or that the next population burst is just around the corner. These false expectations from positions of authority have done nothing to degrade their power. This notion best captures the contemporary condition of the communities along the SLRIBS. Caught between an unrealized Seaway Dream, and the present day reality.

The greatest challenge to the civic landscape produced by the SLS&PP was the detachment of these towns and cities from their identity as waterfront communities.

This was an outcome that began with how OHEC used its absolute authority to realize the Seaway Dream. OHEC made little investment in the realities of the local condition, as evidenced by the official apology detailed in the prologue. Following the construction of the SLS&PP, the final moment of detachment was completed with the construction of Highway 401. The waterfront communities along the St. Lawrence River have a spiritual connection to the big waterway. The St. Lawrence River is the primary natural artifact for the creation of these settlements. Aldo Rossi argues in The Architecture of the City, that a natural artifact cannot be removed from the spirit of a community.[192] The natural artifact conditions our understanding of how the current situation has come into being, and the two aspects are inherently connected.[193] This is not the case following the absolute authority of the SLS&PP. The reconnection of these waterfront communities to the St. Lawrence River is critical for the civic landscape. It is through an understanding of the uniqueness of the place that is necessary for understanding of the context city and its community.[194] Any future design trajectory for these communities should seek to restore this connection between community and river, restoring the spiritual connection severed by the Seaway Project.

It has been discussed and examined in the previous sections how although the infrastructure of the Seaway Dream was constructed and realized, but the Modernist planning that was to accompany it, as illustrated by the Iroquois New Town Plan, was never realized. Despite never being realized, nor the emergence of the industrial utopia, the towns and communities along the SLRIBS are still defined by the groundwork laid by the Seaway Modernist planners. In Cornwall, the Seaway planners set about designing an industrial centre unlike anything before it. Overnight, the city of Cornwall, measuring one square mile, was amalgamated with Cornwall Township, producing Cornwall, The Seaway City, now spanning twenty-four square miles. This additional rural land to the north of the historic city, was destined for new industry.

It was not until the emergence of the logistics industry at the turn of the millennium did some of this land find use. Since the time of amalgamation, the historic core of the city of Cornwall has been spilling out and urbanizing the adjacent lands that were not preserved as zoned for future industrial use. Another outcome was that entire territories of the city were simply seen as leftovers from the vision of the Seaway Dream, and were zoned simply as open lands. This included the entire waterfront, as the Cornwall Canal was simply outmoded and served no purpose. Little thought nor attention was paid to these territories at the time. The strategy of spatial planning that originated from the SLS&PP continues to define these waterfront communities. This has contributed to the malaise that has affected the communities along the SLRIBS. The civic landscape is hampered by the approved official Master Plans that are solely focused on a scale unrelatable to the individual citizen and is solely interested in end results. Land zoned for industrial use can sit vacant until an economic driver creates the opportunity for capital to invest. Deactivated ports can become reactivated. Remediated land can be returned to industrial use.

The expectation of the next macro strategy and end goal, is harmful to the civic landscape. It is questionable if the planners of the SLS&PP produced improved or better communities as a result of their actions in communities such as Iroquois, Morrisburg, or Cornwall. These are communities where the physical landscape of the city was changed by the absolute authority of the macro strategy. This top-down, macro approach to city making is problematic. Our individual lives, and the civic landscape that the collective forms within a community, is not reflective of the frictionless plane on which Urban Planners plan their end goals. The municipal-approved plans miss the reality of existence. They lose the trees for the forest.

The OHEC wielded an absolute authority during the SLS&PP that had the capabilities of overruling Municipal, Provincial, and even Federal law. They removed people from property, destroyed archeological sites, and erased waterfront communities, among them some of Canada's oldest European settlements. The planning trajectory that was initiated during the Seaway Project continues to play out, with limited success. This has contributed to the underperformance. In the post-Seaway condition, it is the acknowledgement, and engagement of the living city that is absent.

The fundamental issue that was established by the Seaway planners during the SLS&PP was the establishment of the idea that the waterfront community's built environment is nothing more than an object. It can be held back and delayed, waiting for the future conditions that can deliver the end goal or the result that was planned. The proposed designed vision must acknowledge that the city is not an object. Six decades following the SLS&PP, the civic landscape of the SLRIBS can no longer afford to wait for the expected conditions that urban planners have put just out of reach. If the logistics industry had happened not to emerge in Cornwall, it is very likely that the lands that finally found use in the logistics industry would remain unused today. We need to look no further than what remains of the Cornwall Canal for an illustrative example of the failed outcomes of the existing planning strategies. Meanwhile over this duration since the Seaway Project, the civic landscape of the city of Cornwall has continued on. Citizens of the city have been born, and have died, regardless of physical conditions of the built environment. The life of the individual is messy and imperfect, and the civic landscape of the collective of individuals is reflective of this. This is everyday life. The situation of this existing condition should invite intervention. We begin by understanding that the civic landscape dwells on the street, not in hearing rooms. The situation warrants attention by those in a position to address it.

The planning of the contemporary city should be reflective of the existing condition of the civic landscape, and not end goals beyond the horizon. The objective-based approach to city making is problematic, it does not take into account duration as it focused on a singular particular result. Understanding the civic landscape as a dynamic series of changes over time is more reflective of the existing reality.

Experimentation Required, Apply Within

Today, the towns and cities affected by the Seaway Project six decades ago must focus on reforming the role of the public in the civic landscape. This is required following the macro top-down Modernist strategy. The role of the citizen is paramount in fixing the city. It is when cities are created by everybody, they have the capability of providing something for everybody.[195] In Ontario, the view and position of citizens is not equal to other interests. This is the nature of power. The Ontario Municipal Board is not a fair fight.[196] The contemporary situation does too little to embolden the position of the citizen.

In the Seaway Valley, the role of the citizen has been in retreat from the civic landscape since the Seaway Project. This apathy is the product of a Modernist strategy that put end goals ahead of the immediate challenges facing these communities. False expectations, continuing disappointments, and bureaucratic blasé of policy makers and planners have produced an apathetic citizen. The remedy places the role of the citizen at the focal point of the civic landscape and its ability to inform the urban landscape. The ultimate goal is to produce a new understanding of the role the citizen can take as an individual in the process of city making. The indeterminate process of participation in the civic landscape has the capabilities to mediate between complexity and scale, between conflict and division. This is lacking in contemporary urban planning. The city today lacks means of experimentation, here it is that we begin.


KEEP OUT

Post-Seaway, Post-Industrial Localized Agency in Cornwall

The role, or lack thereof, of localized agency was unexpected. I have been studying the story of Cornwall since the summer of 2012, and during the past three years I would continuously run into an unexpected situation. I was continuously discovering that there was not a lack of micro, grass root initiatives promoted by citizens in the city of Cornwall, the problem was that they were continuously stifled. These bottom up initiatives were not frequent or common, but the results were always the same: inaction. Could the lack of these grass roots efforts be linked to their common outcome? The macro strategy that was imposed on the civic landscape during the 1950s Seaway Project continues to have repercussions to this day.

Meanwhile, top-down projects that took place above the municipal level could be easily inserted into the city without any issue. These macro projects would often occur at alarming speed, and without public input or consultation. What follows is five case studies, as reported by the fourth estate to the public. The case studies compose of three micro, grass root citizen-based initiatives, and two macro projects that are imposed from the Federal level.

Figure 135: Waterfront former industrial site in Cornwall.

Figure 136: Unwelcomed rowing on the Cornwall Canal

The Cornwall Rowing Club (2012-2013)

"If we're the community, why can't we [use] this land?"[197] That was the sentiment held by local Cornwall resident Kevin Donelly while trying to better his community. Mr. Donelly is a local high school teacher and avid rower, who in an act of passion founded the Cornwall Rowing Club. Having learned to row in his native Ireland, the new resident to Cornwall was impressed by the opportunity to crew he found in the Cornwall Canal. The first article from January 19, 2012, in local media following his efforts recounted his then three year odyssey to secure the use of the Cornwall Canal for rowing. Following three years of work, he took his appeal to the public.

> *"The canal is absolutely fabulous. If communities anywhere in Ontario had a site like that, they'd be jumping for joy. It's straight, it's long enough, there's not too much current, it's fairly sheltered. In terms of having people out there learning to row, you could hardly have a better site."*[198]

Following the proper procedure, he held public meetings, raised public awareness, and brought it to the local municipality and even the local MP, where he found support and enthusiasm all along the way. Mr. Donelly even volunteered for a position on the city's 'Waterfront Development Committee' to further his cause. Mr. Donelly is a civic-minded citizen, and his interest in the city's waterfront went far beyond his own interests. Wishing to start youth programs, he had hoped that the rowing club would furnish a new generation

1. Initial Rowing Club Location
2. Location of Pat White's Home
3. St. Lawrence Seaway Management Corporation
4. Rowing Club Location on Lake. St. Lawrence

with an attachment and passion for the city's historic waterfront. Even at this early juncture, the first public article on his efforts, he had to make the admission that he had expected the approval process to be far quicker, specifically because the land he wished to use had been vacant for decades. Even with the public, city staff, and local politicians being supportive he still found himself after three years unable to secure a site along the canal for public use.

Continuing to pursue his goal of coaching rowing on the Cornwall Canal, Mr. Donelly eventually settled for an 'interim solution', of locating the club above the power dam on the outskirts of town. Far less ideal than the calm waters of the canal, Lake St. Lawrence is an very large body of water with much more chop to contend with and wake from motorized craft. Still Mr. Donelly had the goal of situating along the Cornwall Canal. "All the communities around this area have a rowing club," he said. "We stand out as a community that doesn't' have one ... it's about time."

In the fall of 2012, the newly founded Cornwall Rowing Club had built a partnership with an existing local sporting club, the Cornwall Multisport Club. The Cornwall Multisport Club houses the three sports that make up a triathlon, swimming, running, and biking. Together in their common interests, the two local organizations had developed a proposal for a new canal site proposal. The two groups had identified a vacant brick building, on the banks of the Cornwall Canal, as an ideal clubhouse for water- and land-based athletics. The building was owned by the St. Lawrence Seaway Management Corporation, like much of the of the Cornwall Canal as a leftover condition from the Seaway Project, and had been vacant for six months. The new partnership presented their idea to the city's Waterfront Development Committee, indicating the building would serve the public interest. The two storey brick building could house both clubs, the local bicycle club, and other organizations that might be interested. The facilities could accommodate rowing, canoeing, dragons boats and swimming on the Cornwall Canal. Their proposal made note of the fact that the canal is the proper Olympic length for rowing, and could accommodate three lanes, ideal for hosting regattas. Their proposal was met with more encouragement and enthusiasm from the committee and members of the public. Things looked promising for the Cornwall Rowing Club.

Up to this point, as recorded, the Cornwall Rowing Club and its supporters had been pursuing all proper avenues and channels to establish their simple goal: creating the means for the public utilization of the Cornwall Canal. They had community involvement. They had built new partnerships. They brought their ideas and suggestions to the public, believing in the faith of the public to acknowledge the great benefit to the city. It took less than a month for the legacy of absolute authority to subjugate Mr. Donelly's dream of rowing on the Cornwall Canal.

On October 25, 2012, it was reported that the idea put forward by the two clubs was sinking fast. The city had made a request of the St. Lawrence Seaway Management Corporation to lease or sell the two storey brick building along the canal so that it could become a public amenity. One single resident who lived in the general area of the proposed rowing club site, objected to the idea and grounded the plan according to local media. Area resident Pat White wrote to the St. Lawrence Seaway Management Corporation requesting they deny the request.

> "We all purchased our homes and pay extremely high taxes for the ability to live in a beautiful residential area with a lovely view of the canal and St. Lawrence. I cannot even begin to imagine that property with the unsightly image a [rowing] club could create."[199]

Indicating they felt that a single resident was blowing things out of proportion, the Cornwall Rowing Club maintained that the existing building was a more economic option than a vacant site that would require a building. The St. Lawrence Management Corporation itself went on the record in response to the letter from the resident, stating "Should we be approached we would not recommend this initiative". The city's waterfront committee in turn said that the proposal was 'on hold'.

The final article following the club's attempts at securing a site along the Cornwall Canal was on May 27th, 2013. The club had luckily found a place to call home, but to Mr. Donelly's regret, they had to relocate outside the City of Cornwall to find a site that would have them. South Stormont, the adjacent municipality to the east, offered a site beyond the municipal boundaries of the City of Cornwall. Mr. Donelly, having experienced much public support, with minimal public opposition opined "It's been a frustrating process to get (the club) going".[200] Recognizing the civic opportunity inherent in a rowing club, South Stormont actively sought out a site for the rowing club. The rowing club is the township's first in its history. The townships administration stated, "Township staff concur that the rowing club, the first rowing club for South Stormont, located at Lakeview Park provides public recreational use opportunities and therefore is an excellent 'fit' for this day use park."[201]

Here concludes, the odyssey of the Cornwall Rowing Club, sic the South Stormont Rowing Club, and its founder Kevin Donelly. During my last trip to Cornwall, in August 2014, the two-storey brick building along the canal remains vacant. The Cornwall Canal remains unused for recreation. And it can only be assumed that Pat White's view remains unspoiled.

Figure 137: Zachary Dufresne and Shala Leroux on the Cornwall waterfront.

Cornwall Beach Initiative (2012-2013)

"We want a place we can just go with sand and water,"[202] was the desire of Zachary Dufresne. On July 17, 2012, Mr. Dufresne and his friend Shala Leroux initiated a public effort that would establish a waterfront swimming location for the City of Cornwall. The city originally had a swimming beach along the waterfront, but it had been physically transformed following the Seaway Project and was now the site of St. Lawrence College, a community college. Today, there is no location along the city's waterfront to swim in the St. Lawrence River. Mr. Dufresne and Mrs. Leroux, with the best interest of the public in mind, initiated a petition that would seek to establish a waterfront swimming location.

If a resident of Cornwall has the desire to visit a beach, the nearest one to the city is 10 kms away in nearby Long Sault, in South Stormont. The two citizens recognized this as a problem, and sought to remedy the solution for the betterment of the city. "If there was a beach in Cornwall it'd save on gas and it would be healthier for the economy ... and more people would be happy, because there is a lot of kids at the docks"[203] said Mr. Dufresne alluding to the municipal boat launch that attracts people who wish to be near or on the water. Swimming is strictly forbidden at the boat launch due to safety issues related to the launching of boats. So these two private citizens, acted in what they believed was for the best interest of the city, began to raise public awareness through the media, and start a petition.

Even at the earliest stage of their first public effort, the article local media illustrated the

1. Proposed Location of Waterfront Beach

challenge of their goal. A city councillor, Glen Grant, who sat on the Waterfront Development Committee had a list of objections, from the need to protect fish habitats, to the toxic mercury sediments along the river. Acknowledging the river's current is high along the city's waterfront, Councilor Grant went on to state that the Ministry of Natural Resources is against building any breakwaters on the St. Lawrence River. He indicated the beaches on Lake St. Lawrence are more favourable because there is no current, but it is important to note that these beaches range from 10-40 kms away. This is not an option for every resident who would like to swim in Cornwall, which has one of the lowest income rates in Ontario.

Following the first article dedicated to their effort, public support and momentum began to galvanize around the beach project. A vigorous discussion was carried out in local media, with different city residents weighing in and offering ideas. "All we continually hear is complaints and bickering over the uses and abuses of Lamoureaux Park, yet here is a potentially viable project to get on board with federal, provincial, and municipal coordinates" wrote local resident Dave Windsor.[204] It was evident to local citizens, there was clearly a demand for waterfront swimming access. While there had been concerns about toxic sediment along much of the waterfront, members of the public offered solutions. Specific parts of the waterfront had been excavated during the 1970s, and would offer toxic-free shorelines. Certain locations on the waterfront were more sheltered than others. The inlets excavated during the 1970s were seen as ideal, less polluted, sheltered, and surrounded by land on three sides. Residents wrote in offering support for a municipal waterfront swimming location having seen children swim along the waterfront in unsafe and unhealthy locations. "This behaviour suggests that the kids want an outdoor place to swim during summer"[205] wrote one local resident, Harry Valentine.

One resident even recognized the inherit opportunity in the high current off the Cornwall waterfront. Having visited the Montreal rapids, adjacent to Habitat67, the resident had seen the attraction of a standing wave for river surfers and white water boarders. This resident suggested the same thing be purposefully constructed on the Cornwall waterfront. "The combination of a waterfront beach and waterfront surfing could attract visitors to Lamoureux Park during summer"[206] suggested the local resident. Here were individual citizens, putting themselves and their ideas forward for the betterment of the city. If everyone could agree that there was a need but no means for people to swim along the waterfront in the St. Lawrence River, as there had been prior to the Seaway Project, the project should go forward through the proper channels, and eventually see fruition. That is how we believe things are suppose to work.

The Cornwall Beach Project, originated by citizens, and supported by citizens, came to a quiet end nearly five months after it began. On November 16th, 2012, the city's Waterfront Development Committee was informed of the facts by a representative from the city's Remediation Action Plan. Speaking in an official capacity, Katherine Beehler stated that there was little chance that the seven government agencies tasked with protecting local water quality would ever sign off on the project. Mrs. Beehler revealed that mercury contamination from the city's industrial past exists along the bottom of the river, and any shoreline development would disturb that toxic sediment.[207] Beehler went on to state in the article that the remediation required is not impossible, it is simply just expensive. The Remediation Action Plan is a signed agreement between the City of Cornwall, the Mohawk Council of Akwesasne, and the local Raisin River Conservation Authority to ensure "there is no disturbance of contamination." Cornwall's planning division supervisor, Ken Bedford, had concerns about the cost of constructing a beach, but acknowledged that the environmental concerns were an insurmountable obstacle. "It's taken very seriously by the powers that be, not just at the municipal level," stated Mr. Bedford, acknowledging the city's Planning Department's limited role in the broader landscape of Cornwall's waterfront.[209] On learning of the complexity and duration required for the project, members of the Waterfront Development Committee were turned off of the idea. With the committee moving to put the idea of the Cornwall Beach Project "to bed", city Councilor Glen Grant let his sentiment be known, "For me, from a cost benefit analysis, I don't think this will be a top priority for our committee." [208]

Here ends the citizen-based effort to establish a Cornwall Waterfront Beach that was begun by the initial promoters of the idea, Zachary Dufresne and his friend Shala Leroux. The environmental concerns of toxic sediment remain. Those Cornwall residents who wish to visit a beach, are forced to drive outside of the community to do so. In the interim period, two outdoor city pools were closed, making the need for swimming opportunities ever more prevalent. The city's Remediation Action Plan continues its work, even though the economic realities prevent it from action.

Figure 138: Bob Sloan searching for a dog park.

The Cornwall Dog Park Association (2009-2013)

"They didn't do the job. They should have done a more thorough job"[210] was the impression that Cornwall resident Bob Sloan was left with after the culmination of a half decade attempt to establish a dog park in Cornwall. It had been a long journey, filled with challenges. Like many communities in Ontario, the sight of dogs and their owners is a very present sight in the City of Cornwall. In 2009, recognizing that there was not a single park open to dogs in the City of Cornwall, local dog owners founded the Cornwall Dog Park Association (CDPA) with the singular goal of having a public park dedicated to canines. This grass roots movement worked with the City of Cornwall to find a location for several years. After an initial site was identified within the city, the local Raisin River Conservation Authority objected due to an on site pumping station and the requirement that fences be constructed to close in the area. The Raisin River Conservation Authority wished to work with the CDPA, recognizing the public demand for a dog park, and in turn suggested an alternate site outside of the City of Cornwall, in the adjacent municipality of South Glengarry. Mr. Sloan for his part appreciated the suggestion, but stated that the CDPA's goal was for a centrally located dog park, within the municipal boundaries of the City of Cornwall.

With a signed petition featuring in excess of 2,000 names, the CDPA took their cause to Cornwall's City Hall, where the report by the Christina Lefebvre, the City of Cornwall's Parks and Recreation services division manager recommended that the City of Cornwall continue

1. Initial Proposed Dog Park Location
2. Second Proposed Dog Park Location
3. Final Waterfront Proposed Dog Park Location

to monitor the negotiations between the CDPA and the Raisin River Conservation Authority, and only get involved if the original site did not work out. When the Raisin River Conservation Authority objected to that initial site, the CDPA was forced to hold an emergency meeting to identify alternative sites for a dog park within the municipal boundaries of the City of Cornwall. They identified the waterfront as an ideal location, but recognized that in Cornwall this would be controversial.

The reason why this location was controversial, is because it had long been law in Cornwall that the city's waterfront park did not permit canines, leashed or otherwise. The park is recognized by the City of Cornwall as being dedicated for outdoor use, but the exclusion of dogs prevent some citizens from daily enjoyment of the park. With lobbying by the CDPA, the City of Cornwall was open to carrying out a feasibility study of opening the park to dogs, with the possibility of a limited trial to follow if the feasibility study was positive. For local citizens, the irony of the situation was apparent. There was in fact one single dog that was legally permitted to use the park, a city employee contracted through Border Control Geese Dogs, who was paid to attempt to keep geese of the shoreline. The owner of Border Control Geese Dogs spoke out publicly against the proposal, ignorant of the irony, stating "As a pet owner, I would rather not take my pets to [the waterfront] Park."[211] Local city councillor Bernadette Clement was a proponent of the proposal recognizing "This will encourage a really good quality of life, walking your dog is a good thing and is making people active and bringing people outside."[212]

Late in 2010, it looked as if the CDPA finally had a site for their dog park in the north end of the city. The City of Cornwall was unable to find a location on property they owned, so they signed a five year lease with Cedar Rapids Transmission to locate the dog park on a electrical transmission line right of way. It was not the exact location the CDPA was hoping for along the waterfront, and a single complaint for a neighbour pushed the dog park 100m to the west of the access point for the right of way. Glad to have a site, the CDPA felt the otherwise swampy site held promise. Mrs. Lefebvre of the city's Parks and Recreation Department made it known that the city held no financial obligations in the operations of the park. As the park began to move forward with fundraising, required to fence in the area and secure the site, there were public concerns about the safety of dogs socializing with other dogs. Mr. Sloan of the CDPA took to local media to quell concerns. "The possibilities are endless in our community, but a popular amenity elsewhere is seriously lacking here,"[213] said Mr. Sloan.

After more than two years, the site leased by the City of Cornwall had proven to be far too difficult to prepare as a dog park, and Mr. Sloan and the CDPA were back lobbying the City of Cornwall for the construction of a dog park along the waterfront. They now had a nearby example. In August 2012, the nearby community of Morrisburg in South Dundas, population 2,756 and 40 kms upriver from Cornwall, had constructed and opened two dog parks on their waterfront. Featuring landscaping, fences, lights, and watering station, the dog park in Morrisburg quickly became a popular feature on the town's waterfront. The CDPA wanted to host an organized a trip for member of Cornwall's Waterfront Development Committee to tour the facility and see the opportunity that existed for Cornwall. Mr. Sloan argued that a dog park on Cornwall's waterfront would "ensure the park is well-used and easily accessible, while providing a boost to surrounding businesses." [214]

The work of the CDPA whimpered to an end on May 17, 2013. Mr. Sloan, on behalf of the CDPA, made a presentation to the city's Waterfront Development Committee. Mr. Sloan had been hoping to organize an official visit to nearby Morrisburg's dog park, and organize a meeting between the Morrisburg Dog Owner's Association, and Cornwall's Waterfront Development Committee. This did not happen, as individual members made their own independent visits. Following Mr. Sloan's presentation, the committee voted unanimously in opposition to the proposed waterfront dog park project. There had been many supporters, in excess of 2,000, but there also had been a very vocal small majority against using any piece of the city's waterfront for a dog park. Acknowledging his concern that if parts of the park were reserved for the use of dog owners they would be removed for other users forever, committee member Eric Lange went on the record stating "I'm not against a dog park per se, but I am definitely against it being on the waterfront." [215] With most members of the committee having visited the nearby dog park in Morrisburg, they were unconvinced the model could work in Cornwall. Mrs. Lefebvre of the Parks and Recreation Department objected to the waterfront location, stating "Upkeep of the park, if it sits on the waterfront, will be that much higher, we would have to be vigilant and currently, we just don't have the staff." [216] Acknowledging the loggerheads between the CDPA and the Waterfront Development Committee, Mr. Sloan stated, "It's the waterfront, or nothing." [217] There it concluded, the half decade saga of the CDPA and its chairman Bob Sloan. As of this past summer, there remains not a single dog park within the City of Cornwall, and the CDPA had completely disbanded. The waterfront park remains open for a wide range of uses, but a dog park is not one of them.

Figure 139: Cornwall Port of Entry Dec 3, 2013.

The Port of Entry in Cornwall via the Three Nations Crossing, has been a controversial issue since the Seaway Project, when the federal government broke the Jay Treaty of 1794, and located the Canadian Customs House on Cornwall Island, land that belongs to the Mohawks of Akwesasne. Following the federal government's decision to arm boarder guards in 2009, the Canadian Boarder Services Agency (CBSA) officers abandoned their post on Cornwall Island fearing a violent confrontation with the Mohawks. Following a period when the Three Nations Crossing was completely closed, the CBSA eventually established a temporary facility in Cornwall July 2009, at the foot of the Seaway International Bridge. With a new bridge project announced and founded by the federal government, the CBSA announced plans to create a new Port of Entry to work with the new low level bridge.

The CBSA's stated goal is to eventually establish a permanent Port of Entry in Rooseveltown, New York State, on the US side of the border crossing. This was made clear by Prime Minister Stephen Harper in early 2013. This would be the first CBSA facility of its kind, located on American soil and it was acknowledged that negotiations could take 3-5 years. In the meantime, there was a need for a new Point of Entry to work with the new low level bridge. Although plans and drawings were not completed, the CBSA appeared before Cornwall City Council to announce their plans to use federally owned waterfront land for the new Point of Entry. This was not an ask. Off the record, one local councillor told this author that there was

1. Temporary Port of Entry

utterly zero back and forth. The land previously had been used by the City of Cornwall as a seasonal snow dump. During this council meeting, Cornwall's Chief Administrative Officer Norm Levac informed open council that the federal government had told the city it must vacate the site in the next four months. Arianne Reza, the regional director general for the CBSA admitted that the CBSA hoped to make the new temporary facility a more "welcoming" one.

The CBSA returned to city council with a preliminary rendering of what the facility would look like October 27, 2013. Site preparation at the time was 60% complete. The 10,000 square foot facility would come with a $10 million price tag, picked up by the federal government. Calling the facility 'temporary', Steven MacNaughton of the CBSA admitted regarding duration of timelines, "we cannot not even put a ball park (prediction) in the sense it's being negotiated between Canada and the U.S."[218] The project did not require a building permit, environmental assessment, nor public consultation. The new temporary Port of Entry opened in January 2014, along the city's waterfront, and the final price tag had come to $14 million. It still remains unknown just how 'temporary' the facility will prove to be.

Figure 140: Temporary Cornwall Point of Entry.

Figure 141: Muhammad Tariq and Chuck Charlebois protest construction.

Chemical Tank Farm (2013-)

"The mayor spoke to me and asked me if I knew what was going on and I didn't,"[219] said Charles Charlebois. Mr. Charlebois was the chairman of a Cornwall non-governmental organization, Groupe de Renaissance Cornwall, whose stated goal was the revitalization of Cornwall's former industrial east-end and waterfront. The date was December 5th, 2013, and local residents had became aware of heavy construction along Cornwall's waterfront adjacent to Cornwall Harbour. As word spread throughout local media concerning the excavation along the shoreline, questions were raised, but no one at city hall had answers or information. Not the politicians nor the administration. Mr. Charlebois and his group was caught completely off guard, as they had published on September 23rd, 2013, a publicly funded study to examine the revitalization of Cornwall Harbour. Needless to say, whatever was underway did not fit into their proposals.

The site of this excavation was what had been the original entrance of the Cornwall Canal, constructed in 1834. Following the Seaway Project, the site had housed petroleum tanks for several decades. In the early 2000s, following literally decades of effort by Mr. Charlebois and Groupe de Renaissance Cornwall, the petroleum tank farm was decommissioned, and the site was remediated by the federal government. The Cornwall Harbour Revitalization Project was to be Mr. Charlebois' final swan song, a civic gift to the city, and now with failing health, it was as though history was repeating itself. It became revealed by local media that the site

1. Location of Chemical Tank Farm

was returning to industrial use, and new chemical tanks were be constructed. This was not welcomed news in the community.

"Apparently, there was a request for information about a year ago and people [the federal government] were told 'that's not what we want down there', that's because the federal government does not need a permit, does not need to consult. It's not right. That's our waterfront."[220]

This site had been my own catalyst for involvement in Cornwall's waterfront. I had published for the public, a vision study illustrating the possibilities inherent in this site, and what it could offer the public during July 2012. I had examined the City of Cornwall's Official Plan and saw that the 'conceptual view' of the site was problematic. The citizenry felt very protective of this heritage landscape, and the public opposition was overwhelming. Protests were held, petitions signed, and meetings organized. Public support was galvanized in opposition. It became revealed that the City of Cornwall had no jurisdiction over the site, a legacy issue from the Seaway Project, as it was owned and controlled by the federal government, under the direction of the Ministry of Transportation. It quickly became known that the Ministry of Transportation had quietly approved a lease of the site for the use of storing Calcium Chloride regardless of the local municipality's Official Plan of the City of Cornwall. The Official Plan forbade new industrial uses along the waterfront and recommended the site be kept open for public use.

This situation was further exacerbated because the land was part of a land claim by the Mohawks of Akwesasne that covered the entire north shore of the St. Lawrence River from Cornwall to Quebec. The federal government had a legal obligation to inform and consult with native groups when land was to be developed that was under a land claim, and this had not occurred. The federal government had broken their own rules. The federal government had acted in their own interest, regardless of their legal obligations or the interest of local residents. Best use was not a concern, and there was complete ignorance of the local condition.

With overwhelming public opposition, the City of Cornwall had to act. There had been zero coordination with the local municipality nor provincial government. No building permit, no environmental assessment, and no public consultation. The typical requirements for construction under the Ontario Building Act were not required, as this was land owned by the federal government. Despite that the Ministry of Transportation had leased the land to a private corporation, they had extended all the powers and rights of the federal government to a private entity. When the City of Cornwall's building department posted a 'stop-work order' on the job site, the site foreman ignored the order, illegal under the Ontario Building Act, and further removed the 'stop-work order' altogether, also illegal under the Ontario Building

Act. Legal action was brought about by the City of Cornwall to the Ontario Municipal Board, but there have been no hearings to date. Despite massive public opposition, demonstrations, and petitions, the Calcium Chloride tanks were completed in the spring of 2014, and the first shipment was received on April 23rd, 2014.

To this day the tanks remain on the city's waterfront. The Groupe de Renaissance Cornwall disbanded as previously planned last fall, but rather under the promise of a Harbour Revitalization Project, their work was concluded in the shadow of absolute authority with decades of work being undone. These decisions were made in remote offices of the Ministry of Transportation and were indifferent to what was unfolding in the City of Cornwall. "We're done now; we've exhausted every avenue we can muster,"[221] said Chuck Charlebois, clearly frustrated with the failure of procedure in his final public statement on the topic on May 24, 2014.

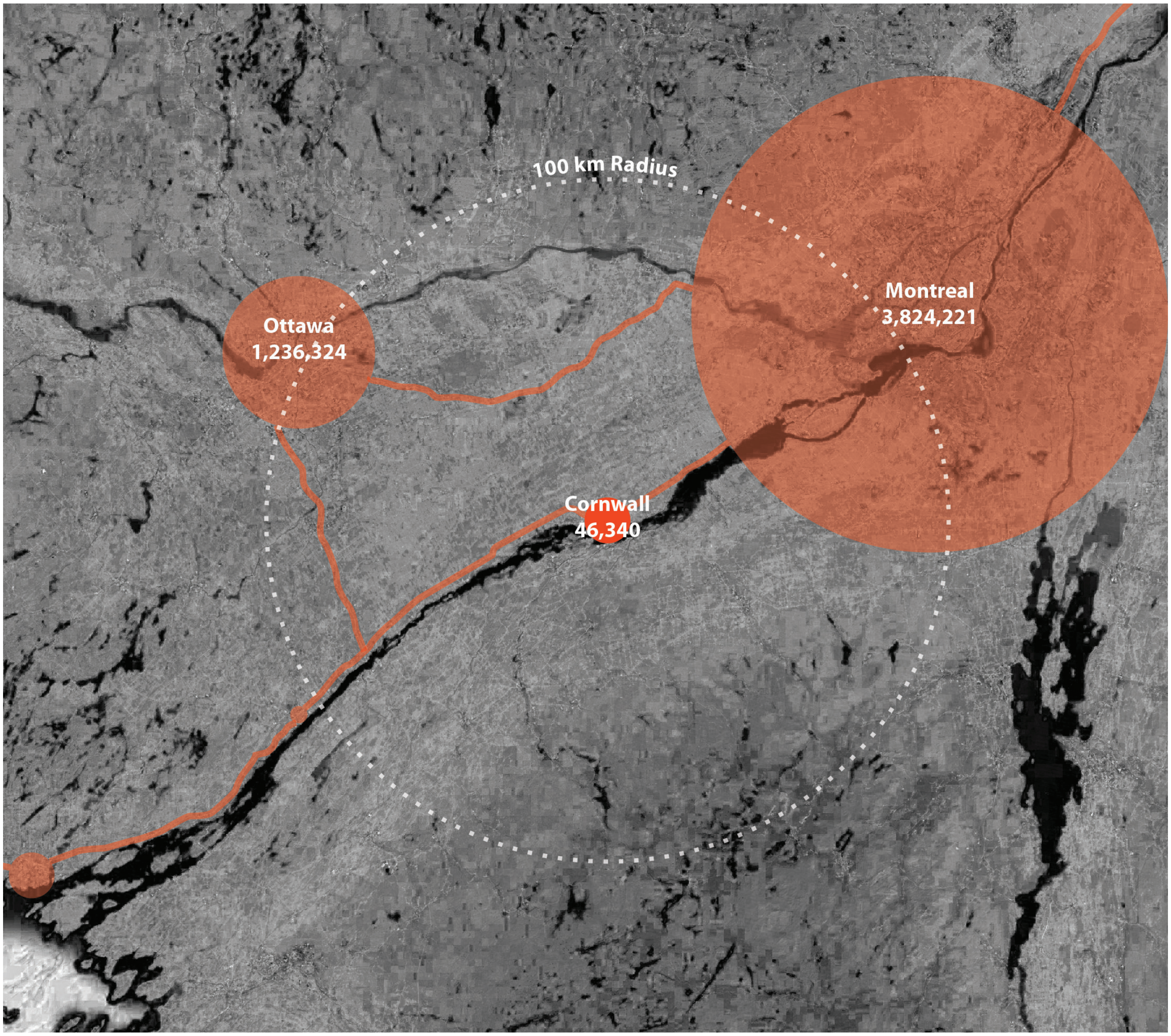
Figure 142: Chemical Tank Construction, December 9th, 2013.

5

DESIGN PROPOSAL

Sixty years ago, the SLS&PP was to usher in the dawn of a new industrial utopia along the SLRIBS. Today, the SLRIBS is an extensive post-industrial landscape. It is a region caught between the ambition and intent of the designs for the Seaway Project, and the contemporary reality of economic transition.

This design proposal is about reconciliation. It seeks to reconnect communities with the St. Lawrence River and restore the cultural identity of the river in the collective memory. Strengthening interpersonal connections of individuals through localized agency along the Seaway waterfront will improve communities. It is now, during this post-industrial transition, that there is much potential in creating a new vision. A new vision that embraces access / motion, habitat / regeneration, and local / agency. Here we no longer concern ourselves with outcomes, but rather embrace the natural order of process.



Cornwall in relationship to regional population centres.

Design Proposal Brief

This design proposal seeks to address the trauma caused to the civic landscape as a result of the Seaway Project. The primary emphasis is on building and strengthening community. The Seaway Project illustrated the problematic approach of a solely top-down, macro strategy. The macro strategy employed by OHEC to construct the SLS&PP had no relationship nor connection to the St. Lawrence River Valley. The landscape and existing communities were simply an obstacle to progress. The scale of the project required that OHEC was charged with an absolute authority to see the SLS&PP realized. This absolute authority not only produced a new landscape, but also produced another unfortunate outcome. This outcome has gone unrecognized since the time of the Seaway Project. The absolute authority of OHEC produced a civic landscape that has been muted. The role of the individual citizen in the civic landscape to promote change and improvement, has been stifled. Localized agency of the citizen is missing.

The absence of localized agency has been a detriment to the communities along the Seaway Project. In the absence of this agency, a design strategy that simply seeks grass root efforts of citizens to improve their communities would fail. It is therefore the role of the design proposal to institute a macro strategy, from the top down, that is specifically tasked with building localized agency in the civic landscape. What is needed is a top-down organization that can seed and orchestrate bottom-up responses to the local condition. The intent is that over time the macro strategy can step back and decline having produced citizen agents that are positively charged in community building and improvement. The goal is to return localized agency in these communities. This strategy seeks to address the common issues identified in the analysis of Section 2. The macro strategy begins with engaging the local citizen within public space and establishing interpersonal connections between citizens. It is critical to change the public perception of 'the city' in these communities. The post-industrial condition along the Seaway speaks to remediation and regeneration. The condition of disconnection from the river provides a demand for a restorative approach to cultural engagement. The cultural significance and identity of the St. Lawrence River must be restored in these communities for them to escape the Seaway Dream.

Design Objectives

Reconnect the community to the shore

Many different historical elements of these communities contributed to a departure from a focus on the waterfront, foremost among them the Seaway Project and Highway 401, but the connection to the river must be restored and built upon. The civic landscape of these communities should return focus on the waterfront as a perpetual landscape. The river front is a special place, and requires appropriate sensitive spatial strategies. Intent should be on increasing and enhancing the user experience along the riverfront. All interventions must offer benefit to the public. Personal connection and interface with the landscape should be maximized. Personal experience with the river will foster an enhanced personal perspective with the river way.

Honour the big waterway

The St. Lawrence River Valley was formed thousands of years ago. It has been the site of human habitation for over 9,000 years. The river played an intrinsic role in developing a culture and way of life along its shores prior to European discovery in the 16th century. Following European discovery, the river valley landscape played an important role in the early national history of Canada. Cultural heritage sites and historical artifacts must be respected and honoured. The construction of the Seaway Project truncated a way of life six decades ago. Since that time, the personal automobile and the construction of Highway 401 along with the deindustrialization of the waterfront has caused a shift in these communities away from the river. The river remains an important public asset. Re-engagement with the river offers the opportunity to secure a new vision for the future.

Ecology

The St. Lawrence River is an open ecosystem. The river is the outflow for the Great Lakes drainage basin, and connects them to the Atlantic Ocean. The river was heavily polluted throughout the history of industrialization along the Great Lakes and the St. Lawrence River. As a river system, much of this pollution had the opportunity to bioaccumulate. The Seaway Project further contributed to this environmental degradation when two hundred and fifty nine square kilometres of land were flooded. Any intervention along the shore must be strategic. Any and all projects must interface with the environment and embrace a culture of stewardship. New program interventions should demonstrate within the community the ability to design and plan with nature.

Improve community

New program along the waterfront should be focused on bringing people together. This is an inherent opportunity to reengage the urban waterfront. Early frameworks should create moments of connection between individual citizens. This civic experience along the shore will increase connection to the river. This does not happen in one particular way, so a strategy should have embedded required interaction. Citizen-derived ideas concerning future use should be focused on improving the experience of the public. These community improvement projects create new connections and networks among individuals. They have the greatest chance at reflecting the local needs as they are products from those most intimate with the local condition.

Stewardship

The Seaway Project required many long-term sacrifices. Future long-term effects and outcomes for a re-engagement along the waterfront must be carefully considered by the community. Everyone needs to have a voice in this exercise. A culture of stewardship of the landscape must be cultivated to safeguard and regenerate the landscape. The short term goal is to create a vision for a future use and recreation along the river that is in harmony with nature. The long-term goal is to cultivate a civic relationship with the river and explore future self-organizing use and development along the waterfront. New explorations of use along the waterfront are to foster an understanding of city building as a process, rather than an end goal. This is a process that is experimental, and inherently will produce some failures, but hopefully many successes. It is therefore intrinsic that the frameworks for these experiments be carefully executed. The protection, and future use strategy of this sensitive shoreline must be carefully explored.

Create new places and networks

Existing access networks are well developed and well used. Emphasis must be on leveraging the existing access networks by creating new places along their routes. The location of these places should be defined by their adjacency to community, historical artifacts, or existing infrastructure. These locations, where possible, can be augmented by additional access networks or required infrastructure. Spatial relationships between places, access networks, and histories can be emphased by relative surfaces and forms. Interfacing with existing access networks will combine additional external connections to the community. Creating new successive networks from existing ones will promote further recreational use of local users.

Design Principles

Frameworks

The design proposal has identified three frameworks to best address the evolving conditions of the St. Lawrence River international border region. These three frameworks are intended to reorder over time the formal and civic identity of the public waterfront along the St. Lawrence River. Development along the linear St. Lawrence River has produced strata of infrastructure corridors running in parallel with the big waterway. These existing motion networks interconnect the region, including the existing multi-use Waterfront Recreation Trail that extends between Toronto and Montreal. The Waterfront Trail passes through all of the towns and cities along the river. In many of these communities, early industrialization has left a legacy of contamination along the waterfront. These waterfront sites offer the opportunity to regenerate the environment with native ecology. The ultimate goal of regenerating the environment is the belief that it can create the opportunity to regenerate civic identity. Community improvement and self determination through localized agency will ultimately improve civic identity.

Access / Motion

The existing networks that interconnect the towns and cities along the St. Lawrence River include the St. Lawrence Seaway, the historic Ontario Highway 2, the Canadian National Railway, the electrical Morrisburg Transmission System line, Enbridge's Line9 pipeline and Highway 401. The Waterfront Recreation Trail follows surface roads for much of its duration, but between Morrisburg and Cornwall, along the site of the Seaway Project, almost all of the trail is a separated waterfront route. The design proposal seeks to further develop these existing networks wherever possible. Further public accessibility to existing networks is a low-cost formal development that contributes to the civic identity of these landscapes. Shoreline opportunities should be leveraged with programme adjacencies wherever possible. Public accessibility and urban proximity to the river differs along the river, becoming more prevalent closer to Cornwall and the centre of the Seaway Project, but the design strategy is meant to improve upon existing conditions found throughout the region.

Habitat / Regeneration

More than a century of industrial production and manufacturing along the St. Lawrence River has produced waterfront contaminated brownfields. Further environmental degradation occurred when the Seaway Project flooded the St. Lawrence River Valley and created Lake St. Lawrence. The design proposal constantly seeks to restore and regenerate the native ecological habitat through sensitive strategies. The design therefore does not seek to impose the elusive idea of nature, but designs with the native ecology. By default, the existing condition if there is minimal economical forces, results in a blind formal approach to these sites. Their urban proximity to the waterfront means that they are far too charged in the urban identity to be allowed to suffer this fate. A low cost cyclical strategy of planting key native plant species can offer a natural means at remediation. Fibre remediation has the further advantage of creating opportunity for new public programme that coincides with the cyclical strategy of planting of this new landscape. The goal is to use low cost, low impact strategies to prepare these sites for future use.

Local / Agency

The city is a house built by many hands. Civic involvement is paramount in regenerating the local urban environment. The large macro strategies of the Seaway Project has harmed local civic agency. Civic self-determination can be fostered through community improvement strategies. These critical opportunities to implement macro strategies with the intent of creating local agency is paramount to the initial phases of the design proposal. The ultimate goal is that over time the design proposal sees the macro strategy of fostering local agents subside into an armature for these local agents to initiate their own projects. This will ultimately lead to an improved civic identity through public involvement. But the design proposal does not stop there. It is critical for a community to have the ability to experiment with new forms of exploration and innovation along the public waterfront. The design proposal must therefore facilitate this sort of experimentation. These civic experiments are meant to be inexpensive, functional, and social, and can be indicative of future use and development. The re-engagement with the public waterfront be inclusive and open to all.


COMMUNITY CONSERVATORS
POWER PROJECT
Cornwall

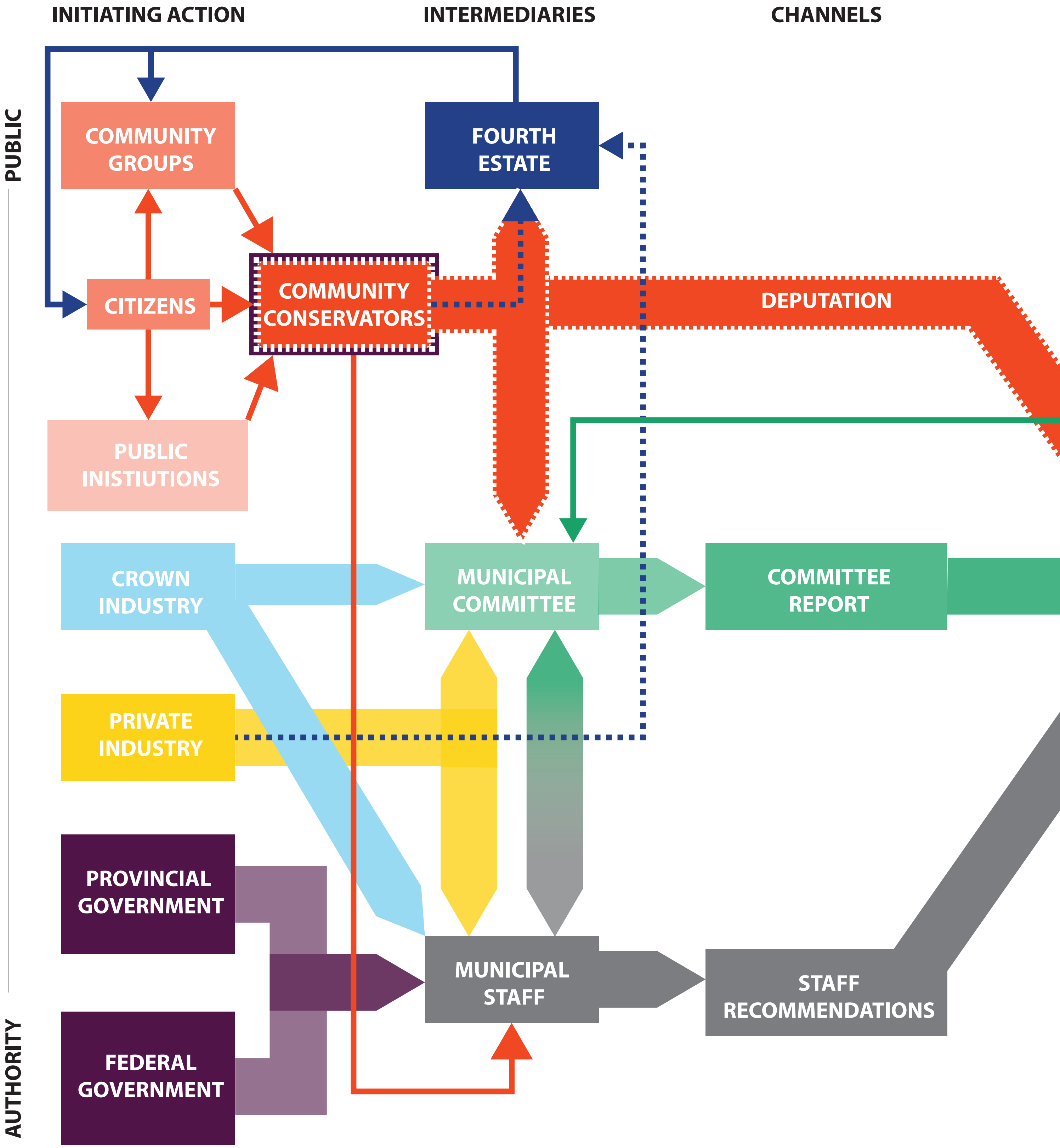
Local / Agency
Community Conservators

In Cornwall we have seen citizen-directed projects, supported by the public, fail. These citizen agents and their proposals have been few and far between. The track record of these citizen-initiated projects only further erodes the capabilities of local agents. Already suffering from a lack of agency, the civic landscape is further stifled when these limited proposals spend years in limbo only to eventually be abandoned by the citizens who initiated them. In the face of this, projects initiated from a seat of power or authority, that are vehemently opposed by the public, are just inserted into the city without regard for the local public interest. What is clear, is that the existing system is operating in disregard of the civic landscape. One single citizen can put a stop to a citizen-initiated proposal that only seeks to improve the quality of life in the city, yet an almost universal citizen objection to an industrial proposal along the waterfront simply occurs without consultation or notification of the municipality.

There is not a complete absense of agency in Cornwall, but there is a large deficit of it. The limited agents who seek to improve the civic landscape need to be bolstered. The civic landscape itself requires underpinning to embolden additional local agents. To these ends, the city of Cornwall requires a new societial institution. Allow me to introduce the **Community Conservators**.

Operating within the community's social structure, Community Conservators is meant to be a movement and forum that seeks improvement of the civic landscape, for the betterment of the physical city. Operating outside the contemporary economical structure, Community Conservators is a formalizing of the civic landscape that deploys tactics, organizes events, and creates cataclysms. This is a matter of societial transformation. Without capital interest in the landscape of the city, their only interest in citizen initiatives and projects is community well-being. Recognizing that Cornwall's greatest asset is not its proximity to infrastructure, nor inexpensive land, it is the people within the community itself. The extremely limited capital resources of the Community Conservators is countered by the unlimited capabilities and creative potential of the civic landscape.

Community Conservators is a movement that is reflective of the community. Composed of anyone who would like a seat at the table, neighbours, local business people, city councilors, the mayor, new arrivals to the community, students, and elders, it is meant to be inclusive for anyone who would like to be involved. It begins as a drop-in centre in an abandoned storefront in the downtown. Community improvement ideas are developed and fostered here. A weekly forum will be held to review and discuss these ideas embracing community input. If the city is a place for everyone, there is room for everyone to have a saying concerning the future of the city.


INITIATING ACTION
INTERMEDIARIES
CHANNELS
PUBLIC
AUTHORITY
COMMUNITY GROUPS
FOURTH ESTATE
CITIZENS
COMMUNITY CONSERVATORS
DEPUTATION
PUBLIC INISTIUTIONS
CROWN INDUSTRY
MUNICIPAL COMMITTEE
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PRIVATE INDUSTRY
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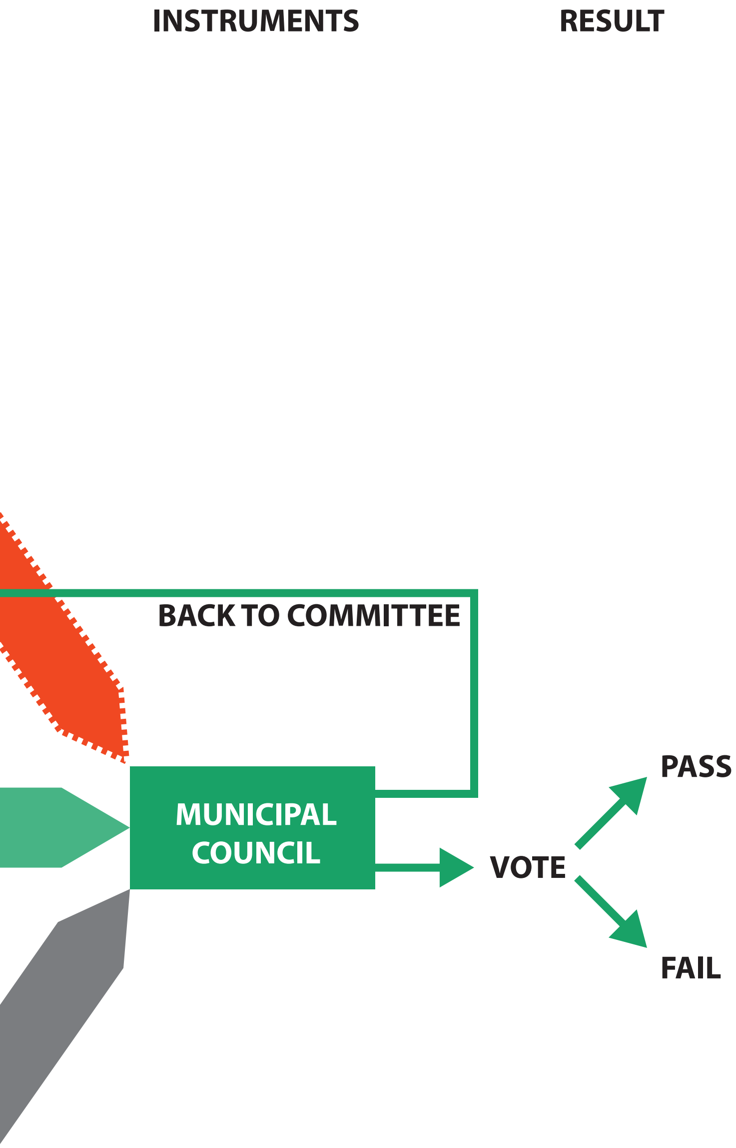
STAFF RECOMMENDATIONS
FEDERAL GOVERNMENT



Community Conservators as Public Advocates for the City

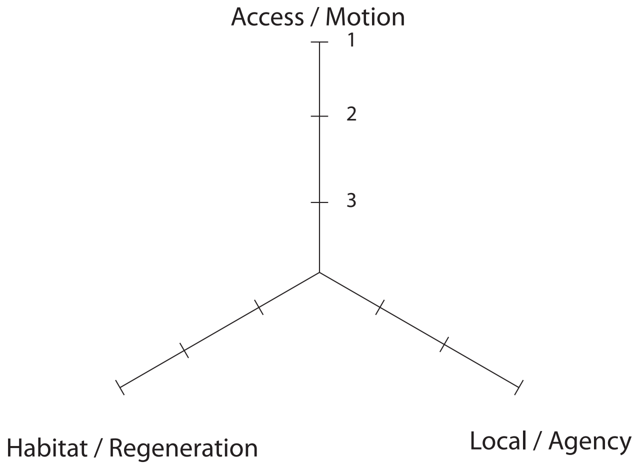
The intent of the Community Conservators movement is to supplement the existing municipal governance structure by taking on a role of community deputation. Currently, the system favours projects that come from positions of authority and power. The Community Conservators movement is a means to address this.

As a forum, we are interested in projects that improve the civic landscape of the City of Cornwall. The intent is to seize on existing opportunities and create new means of leisure and recreation. Embracing existing and new elements of social and cultural program, citizens can bring ideas to the Community Conservators forum or storefront and find a sympathetic advocate who have the tools and means to bring the idea to realization.

Proposals initiated by citizens or advocated by the Community Conservators forum should fit within one of the following categories:
Knowledge and Learning
Remediation and Regeneration
Sports and Health
Neighbourhood Improvement
Dialogue of Cultures
Staged Experimentation

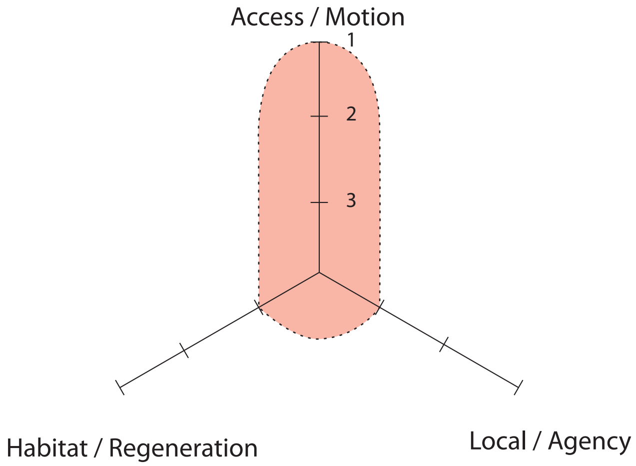
The first step examines the essential community suitability of the project proposal, by a public review during the weekly forum held at the storefront. After the forum review, the project proposal is again publicly reviewed at the end of the month forum by an advisory committee made up of Community Conservators members and representatives from the City of Cornwall's Planning and Development Department. The second step then involves the Community Conservators bringing the Project Proposal to the appropriate municipal committee and entering the existing municipal system for approval.

Phased Design Strategy



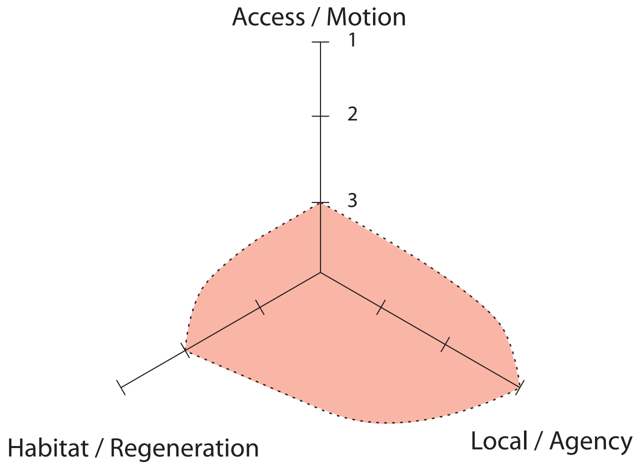
Strategy Over Time

The city is not an object set within a spatial field captured at a particular moment. For this design proposal, it is critical to understand the city as an organism, or more accurately as the product of a community of organisms, within a biotope. The city therefore is the sum of biotic and abiotic interactions. It is critical to understand these interactions as occuring over time. Removing this design proposal from the normative architectural confines of Euclidean space, three dimensional geometry, and embracing a durative process is more reflective of the operations of the city. The introduction of the fourth dimension, spacetime, is the only way to accurately reflect the process of city making. This strategy is not limited to the Regeneration / Remediation Framework, but also to Access / Motion and Local / Agency. The bolstering of localized agency is not something that can be fostered instantly, it will require time. Over time with the introduction of orchestrated events, then curated citizen-initiated projects, the idea and notion of localized agency will grow and take hold within the community.



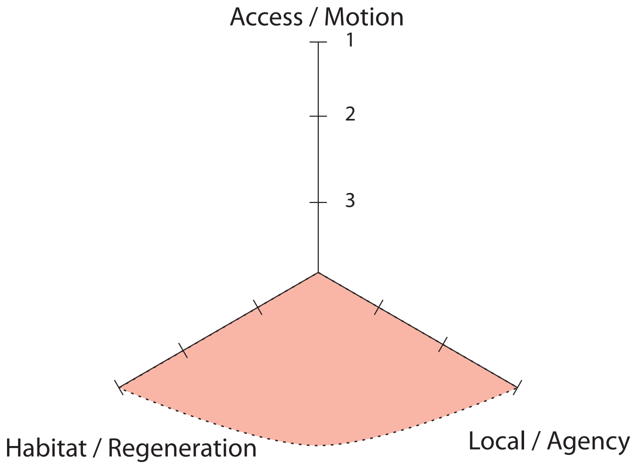
Phase One

Phase One begins with orchestrated events to announce to the community that something new is beginning. New connections to existing access networks and proximity to brownfields, waterfront, or urban communities is advantageous. The site should be an under-utilized portion of the city. Phase One should begin with an event, the Initiation, with the intention of announcing something new. This should be a large community-focused event where people simply need to bring themselves. Following the Initiation, boundaries and thresholds of the site should be established. There is now notice of something happening, and it is occurring within a certain place. With the site selected, strategies of reintroduction can begin. Explorative and community focused walks of existing foot trails and paths are a good place to begin. Discovery and celebration of built artifacts can follow. These are low impact, low cost actions. Discussions focused on ecological regeneration can introduce initial planting strategies. The role of civic action is unfamiliar, so the introduction of civic action is critical during Phase One. Phase One is concerned with creating personal moments between the user and the site.



Phase Two

Phase One established an understanding and appreciation for the site. With the community beginning to be engaged through directed actions in Phase One, Phase Two begins with the selection of critical catalyst sites. Once this catalyst site is selected, announcing it to the public through an event is critical. Catalyst locations with program adjacencies can be leveraged to create new civic opportunities. Required infrastructure to serve the public are introduced at the catalyst sites. Additional access networks should be developed to augment new routes introduced in Phase One. New plantings are to be introduced. Successive species begin to intermix within the new habitat zones. New program elements can be introduced on an experimental trial. Creating a diverse range of uses is integral to Phase Two. It is during Phase Two that the first citizen-initiated experiments can be carefully introduced. New uses of the site will emerge and begin to take hold. Phase Two is concerned with creating new moments of personal interaction within the community. The site now attracts users from outside of the community through the Waterfront Recreational Trail.



Phase Three

By the end of Phase Two, all new access and motion networks should be established. Phase Three is concerned solely with furthering the establishment of habitat and ecological regeneration, and furthering the role of local civic agency. Feedback gained for civic experiments carried out during Phase One and Phase Two have informed a new layer of established program on the site. Experiments that have not worked have fallen away, as new civic experiments are established by a new wave of active local agents. The design strategy is now supporting and facilitating community involvement. Site plantings continue to evolve and mature over time. Initial plantings during Phase One should be reaching maturity by Phase Three, spurring the introduction of new cyclical species that feed off the nuts and seeds of those initial propagations. New ecologies may overcome introduced plantings during earlier phases, but this is permitted. Phase Three is meant to become a model of development for additional sites within the community. It is finally during Phase Three that future development of the site can be considered.

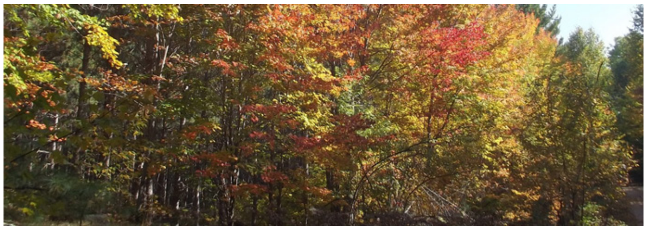
Regenerate Planting Strategy

Grove Woodlot

The Grove Woodlot is open public space that is notable for open fields with outcroppings of trees, and individual plantings. The Grove Woodlot is defined by the open field. It is the intent of the design proposal that these open fields are mostly allowed to exist in a feral state, while selected areas, such as spaces along circulation routes, are maintained with standard practices. There, maintained areas create open lawn conditions for public leisure and recreational uses. The fields that are allowed to go feral are incubators for natural processes as they occur. A pine seed from a pinecone may be deposited here by the excrement of a passing racoon, and the pine tree may take root and grow within the field. These feral fields in the Grove Woodlot zones are constantly evolving as species of flaura and fauna compete to exist. Notable tree species are White Birch, Yellow Birch, Grey Birch, Trembling Aspen, and Willow. The fields create habitat for small field mammels such as Rabbits, Racoons, Red Tail Hawks, Great Horn Owls, Ground Hogs, Field Mice, White-tail Deer, and Fox.

Nest Stand

The concept behind the Nest Stand is the need and requirement to augment public space on this scale with biospheres that do not suffer from human interaction. Fenced off to restrict public access, the Nest Stand is meant to be a incubator of natural processes. This concept is similar to the natural processes that occur along a restrictive fence line. Plant species take hold here as their seeds are collected by the natural windbreak. Benefitting from the shelter afforded by the constricted nature of the Nest Stand, successive species, often termed 'overgrowth', overcome each other. These processes are augmented by seeds deposited in the excrement of biotic components that utilize the Nest Stand. Once mature, these plant seeds and species colonize beyond the limits of the Nest Stand to populate additional areas of the site.



Thicket Bush

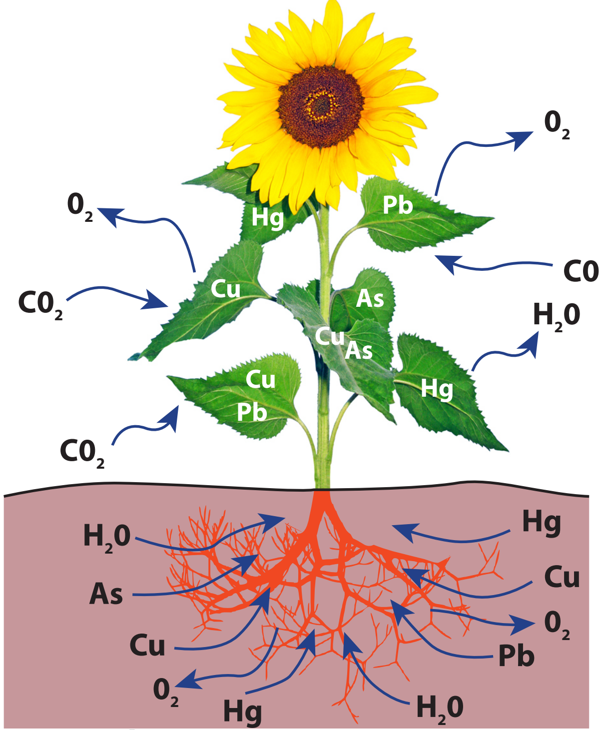
The Thicket Bush is the name given to the clusters of native Great Lakes and St. Lawrence Forest that are to occupy the site and are open to the public. This natural system was once found throughout the St. Lawrence River Valley, but deforestation spurred by European development since the late 18th century has degraded this forest region. For this reason, the design proposal calls for reforestation on the site with the intent of creating pockets and clusters of this native bush. Critical tree species include Eastern White Pine, Red Pine, Eastern Hemlock, Yellow Birch, Sugar Maples, Red Maples, Beech, Red Oak, Basswood, and White Elm. This habitat supports fauna such as Cardinals, Woodpeckers, Wood Duck, Eastern Screech Owl, White-tailed Deer, Coyote, Hare, Eastern Chipmunk, American Red Squirrel and Eastern Gray Squirrel.

Shoreline Landings

The Shoreline Landings are an element of the site's landscape that require careful maintenance. The intent is to reintroduce native flora and fauna along the St. Lawrence River shoreline on the site. The shoreline condition differs from the Thicket Bush due to the windfall that occurs along the water's edge. Here, large storms have the capibility to fell trees and create open space along the shore. Here careful stewardship can create a shoreline habitat for flora and fauna, while maintaining views of the river. The openings along the waterfront create more than just view corridors, as they create opportunities for personal contact with the shoreline. Canoeist and Kayakers can launch or put in at these spots. Critical tree species include White Pin, Eastern Hemlock, Basswood, Grey Birch, and Yellow Birch. This habitat supports fauna such as Wood Duck, Bald Eagles, Golden Eagles, Ducks, Cormorant, Otters, Fisher, and Muskrat.

Remediation Planting

Sunflower Phytoextraction



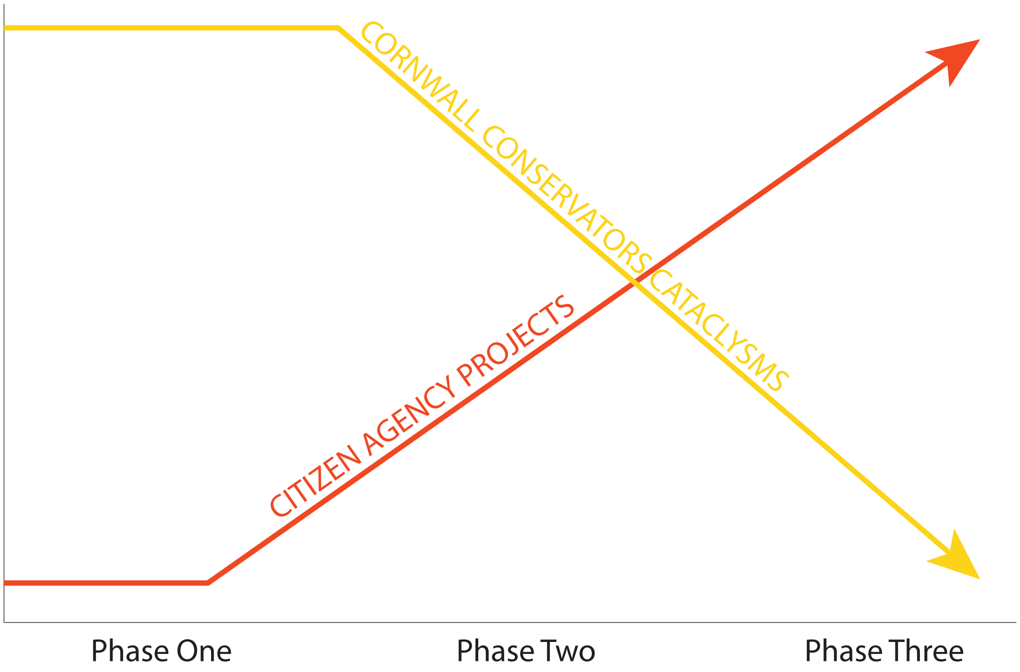
Paper Production Contaminates

- Copper (Cu)
  - Mustard Seed
  - Alpine Pennycress
  - Poplar
  - Sunflower
  - Duckweed
- Mercury (Hg)
  - White Willow
  - Rapeseed
  - Alpine Pennycress
- Arsenic (As)
  - Bent Grass
  - Ladder Brake
- Lead (Pb)
  - Bent Grass
  - Ragweed
  - Mustard
  - Rapeseed
  - Sunflower
  - Rapeseed
  - Wheat

Phytoremediation

Sites along the Cornwall Canal were used for industrial practices for over a century, and as a result these sites have become contaminated. Ontario law concerning the remediation of brownfields places the liability associated with remediation efforts on those that undertake it. The result is that many brownfields remain abandoned and contaminated until there is enough economic pressure to make remediation viable. This is not the case along the Cornwall Canal at present.

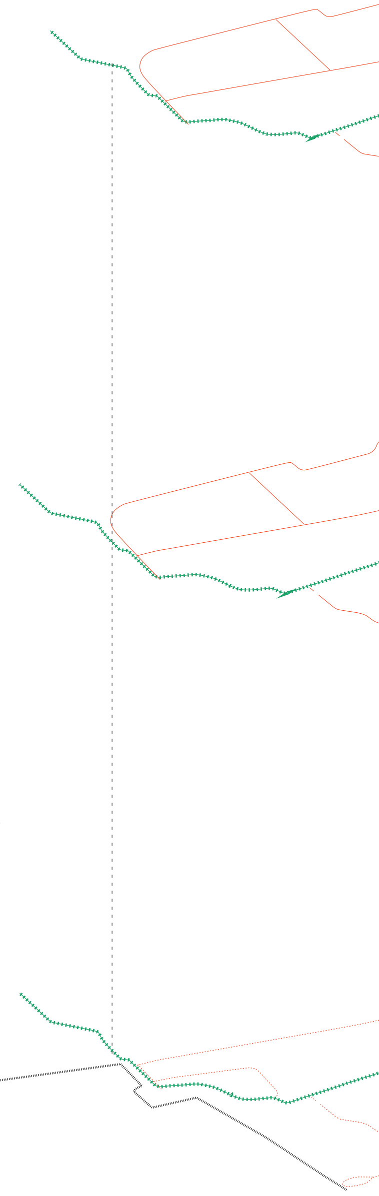
Phytoremediation is the deployment of natural processes to address environmental problems associated with pollution. As a form of bioremediation, Phytoremediation uses plants that have natural abilities to mitigate contaminates from the soil without the need for heavy excavations. Rather than remove contaminated soils for off-site costly treatments, this design proposal's Remediation Planting Strategy sees a successive planting strategy that both eliminates contaminates from the soil, and creates a new public landscape feature. Unlike contemporary agricultural practices, the intent is not placed on production, but rather embraces the cyclical nature of these plantings. Grown seasonally, these sites of remediation create the opportunity to hold community events and inform the public about the requirements and needs of the bioremediation practices. The result is that a blighted site within the urban setting has now become a focal point of the community. The public events on the site during this process begins to return the site into the identity of the civic landscape.

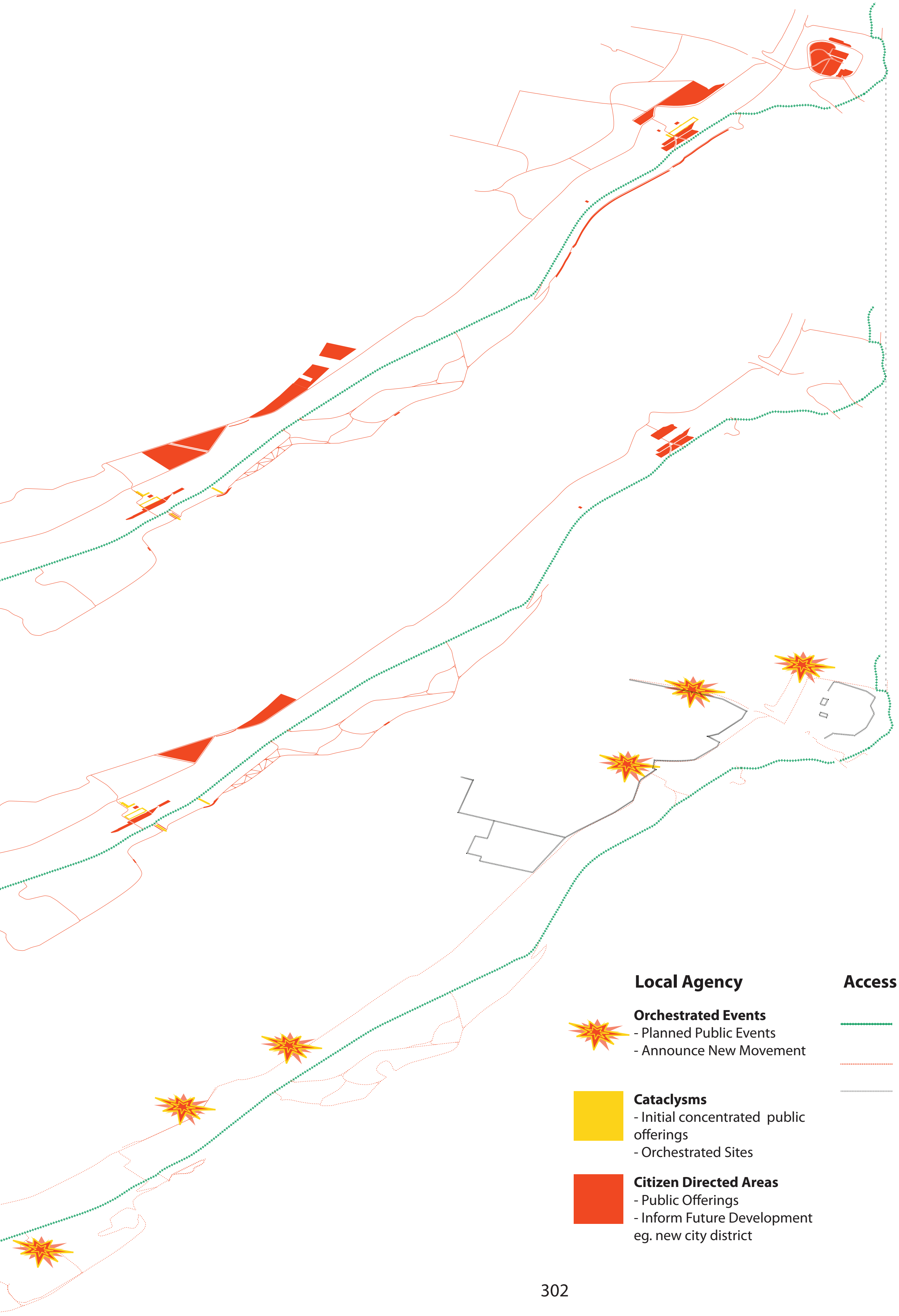


Cornwall Conservators CityLab Program

The Community Conservators movement begins in Phase One by announcing through orchestrated events that something new is happening within the city. These events are to establish the ideas behind the Cornwall Conservators movement, bolster existing and failed attempts at citizen agency, and foment further citizen agency. During Phase Two, a new means for citizens to experiment with the future of the city is introduced, this program is called the Cornwall Conservators CityLabs.

Since the time of the SLS&PP, the city of Cornwall has been excluded from defining the Cornwall Canal Lands as they are under the jurisdiction of the not-for-profit St. Lawrence Seaway Management Corporation (SLSMC), a Canadian Crown Corporation. The Cornwall Conservators view this as an opportunity. The Cornwall Canal Lands are outside of municipal control and by entering into a private public partnership (P3), they offer the chance of the citizenry of Cornwall to experiment with the future of the city, outside of the confines of the Ontario Municipal Act, and create an opportunity for the SLSMC to restore localized agency. Curated by the Cornwall Conservators, specific parts of the Cornwall Canal Lands will be made availiable for citizen-initiated programs that seek to serve the public good. Citizen proposals must fit within the defined themes of the Cornwall Conservators movement, but not-for-profit, and seek to improve life within the city. This experiment outside of existing conditions is demanding and complex, but not one outside the abilities of the public. Careful control and oversight will be carried out by the Cornwall Conservators and the results will be beneficial to localized agency and the future of the city.





Phase 3

Access / Circulation

Cornwall Conservators Cataclysms

Local / Agency

Phase 2

Access / Circulation

Local / Agency

Cornwall Conservators Cataclysms

Phase 1

Access / Circulation

Cornwall Conservators Orchestrated Events

Local Agency

✸ **Orchestrated Events**
- Planned Public Events
- Announce New Movement

🟨 **Cataclysms**
- Initial concentrated public offerings
- Orchestrated Sites

🟥 **Citizen Directed Areas**
- Public Offerings
- Inform Future Development eg. new city district

Access / Circulation

Waterfron Recreational Trail

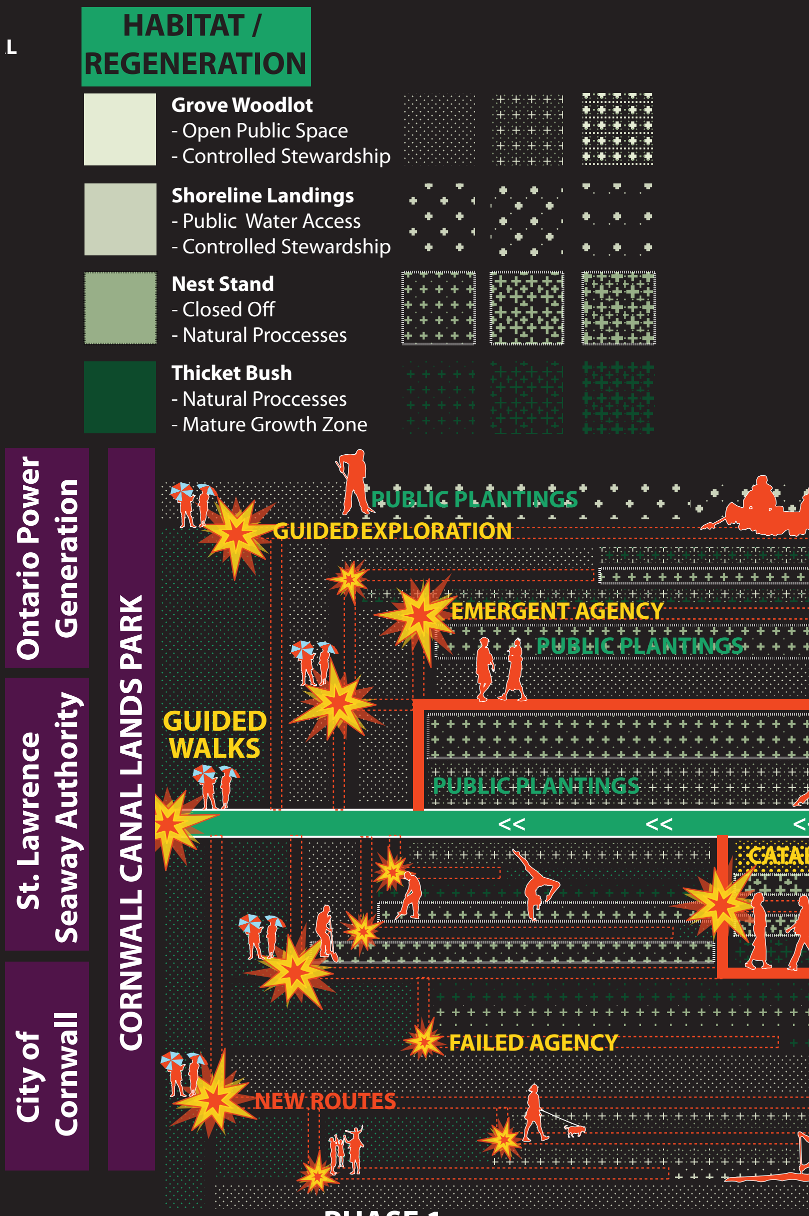
Foot Trails

Fences

Simulation of Successive Spatial Dynamics

In Cornwall, citizen initiatives concerning civic improvement have not been embraced by the City of Cornwall. Individual citizens have perceived room for improvement within the city, and have made their opinion known through an attempt to change the physical city. Repeatedly, the outcome from these attempts at changing the physical landscape of the city have been negative. The failure to establish a culture that embraces ideas from the civic landscape only further stifles citizen agency.

Moving forward, Cornwall would benefit greatly by releasing the forces of citizen agency along the public waterfront. There is a great quantity of public land available in Cornwall. If some of this public land would be made available for temporary use, it would create a means for citizens to experiment with the future of the city. The creation of a program that encourages citizen agency would return the power of the city to the citizen. This type of civic engagement with the physical city could become a major characteristic of the city. This new approach of experimenting with the character of the city, both as a physical landscape and the abstract civic landscape, does not preclude official involvement of the City of Cornwall. Involvement of the City of Cornwall, the St. Lawrence Seaway Authority, and Ontario Power Generation, with the Community Conservators program will generate a cooperative approach to experimenting with the future of the physical city. The creation of localized agency actually requires the existing resources and work of these official channels of authority and power. The orchestration of seeding localized agency is an open process that should be curated by those who are familiar with the city's formal planning process, while the formal planning process should be flexible to the outcomes of the citizen based initiatives.



PHASE 1
SEEDING

The Community Conservators play a very important role during Phase One. Simply establishing a program that encourages localized human agency would fail, therefore the Community Conservators must serve as civic catalysts during Phase One. A mixture of orchestrated events with the intent of announcing the new program and guided exploratory walks will begin to reintroduce citizens to this overlooked part of the city. With the active community focus on the site, initial planting strategies through public engagement can begin. Civic experience with the program will create new citizen actors on the site.

LOCAL AGENCY

Orchestrated Event
- Open Public Event
- Guided by Experts

Public Event
- Initiated by Public
- Expert Assistance

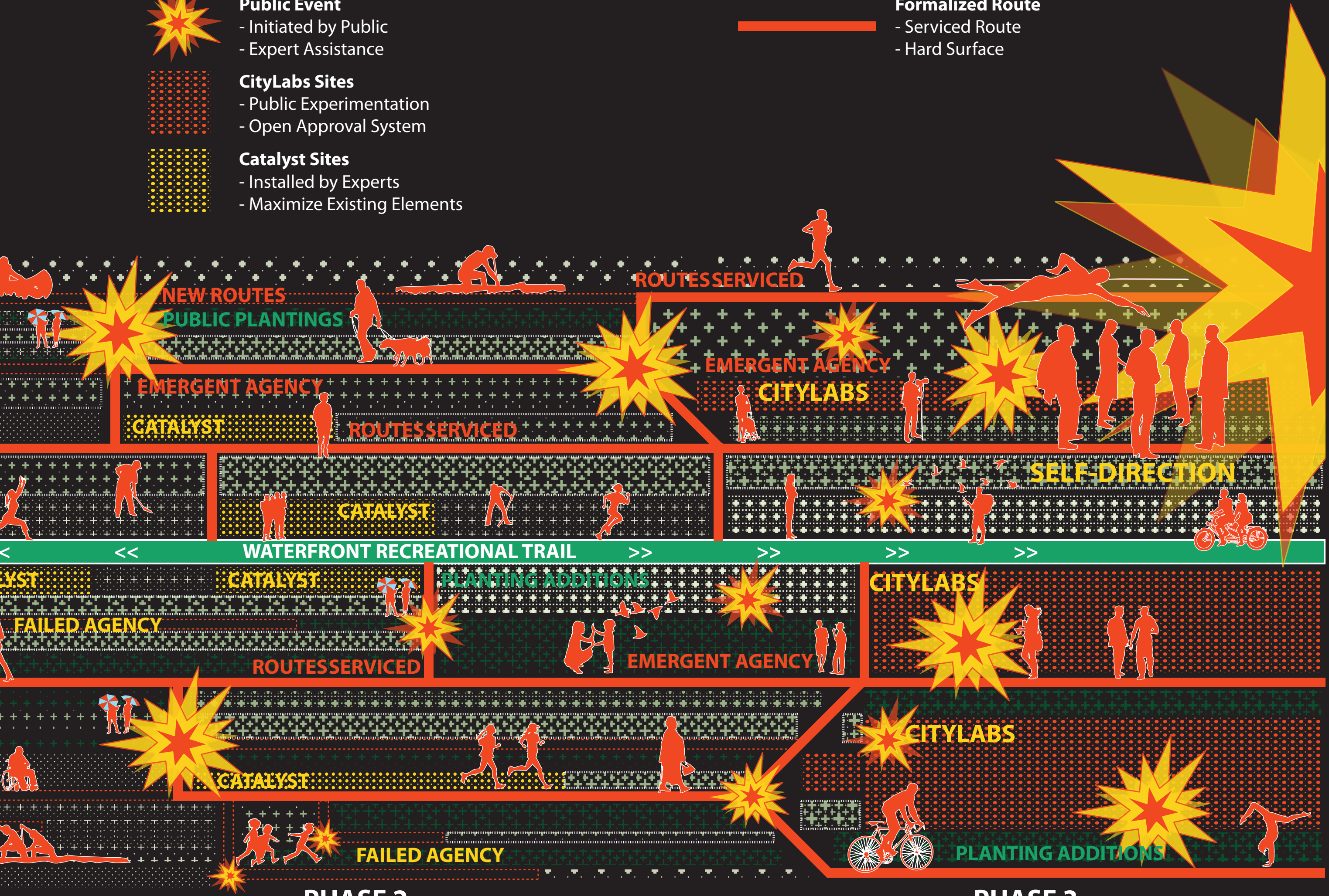
CityLabs Sites
- Public Experimentation
- Open Approval System

Catalyst Sites
- Installed by Experts
- Maximize Existing Elements

ACCESS / MOTION

Exploratory Route
- Guided Walks
- Existing Shortcuts

Formalized Route
- Serviced Route
- Hard Surface

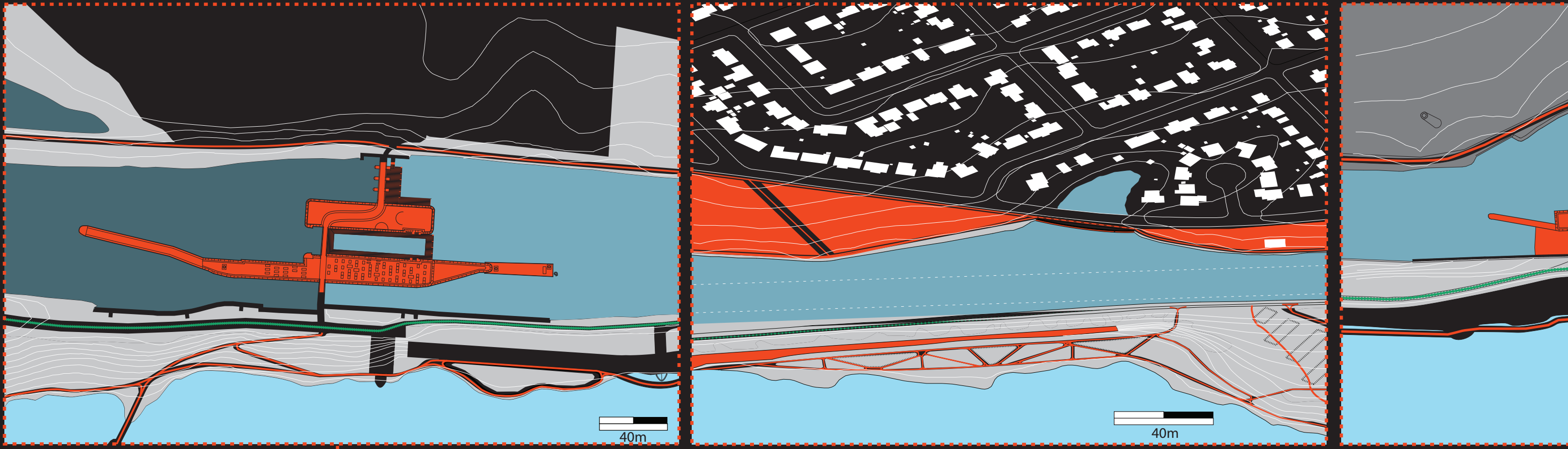


PHASE 2
CATALYSTS & CONSOLIDATION

Phase Two continues the processes of Phase One. Exploratory routes and paths on the site that emerged through the Guided Walks of Phase One have begun to become more formalized. Catalyst sites are introduced to maximize public engagement. Orchestrated events and curated moments of civic agency by the Community Conservators continues on the site, with a mixture of success and failure. Each attempt is carefully recorded so that the experience may inform future attempts. Public exposure to the site has begun to produce citizen-initiated proposals for the site. Public planting strategies are ongoing.

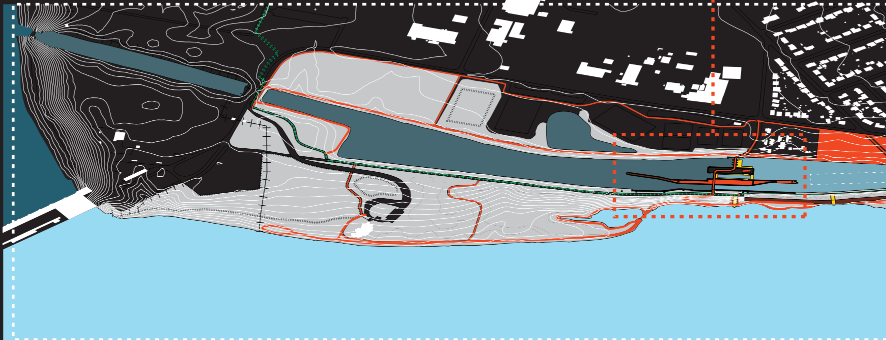
PHASE 3
DIVERSIFICATION

Phase Three is notable for the end of events orchestrated and directed by the Community Conservators. Retreating to the role of curator, events on the site are self-directed by the civic landscape. The Community Conservators catalyst sites have illustrated what is possible on the site during Phase Two, and now during Phase Three the CityLab program becomes available for public use. Citizen initiatives that previously were stifled now have a temporary place in the city to experiment with. The public planting strategy continues with stewardship a priority, as maturity of planting approaches.



■ Public Lands

■ Brownfields

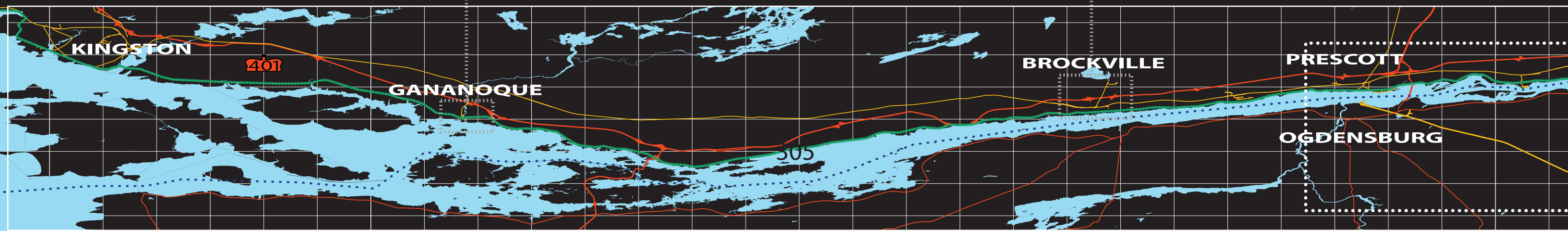


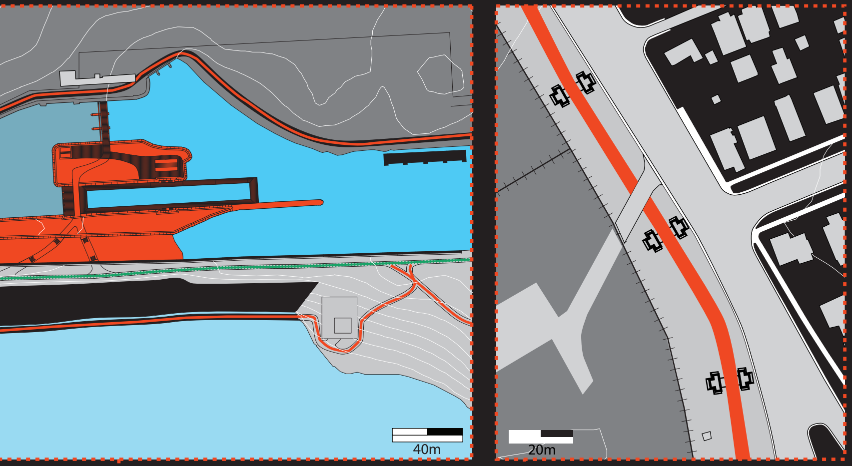
M

The Cornwall Canal Lands are truly an architectural scale in the traditional sense. The methods that are employed here speak to the site as a whole. The northern shore between the canal and the city are the location of the early catalyst interventions and the later CityLab program. It is about interfacing and regenerating an overlooked part of the city.

XL

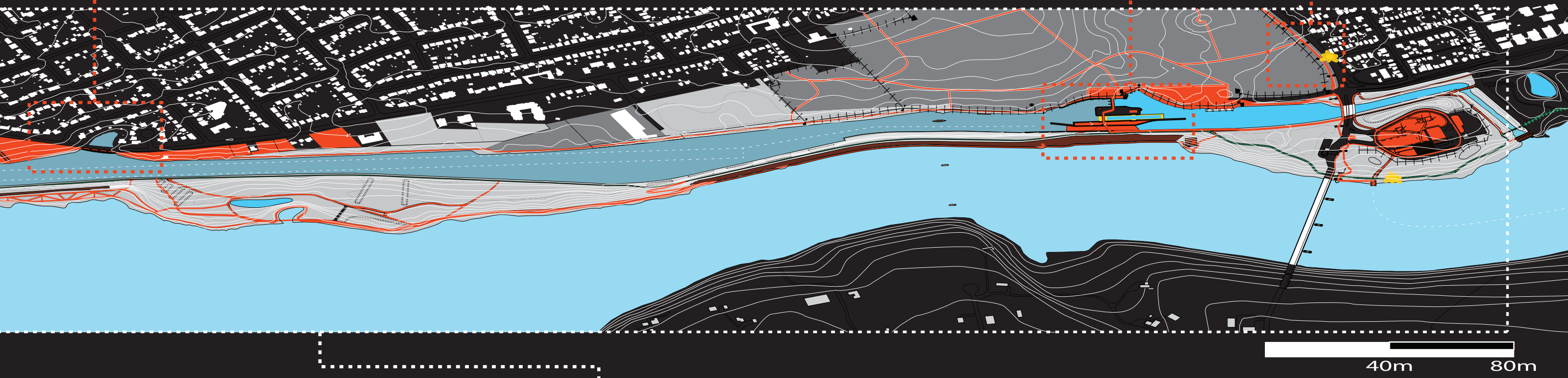
The XL scale addresses the manufactured landscape known as the Seaway Valley. Massive amounts of public land have been preserved as a result of the Seaway Project. Natural processes have been reclaiming land that was previously developed. This scale requires macro strategies that engage with these natural processes and will safeguard this landscape for future generations.





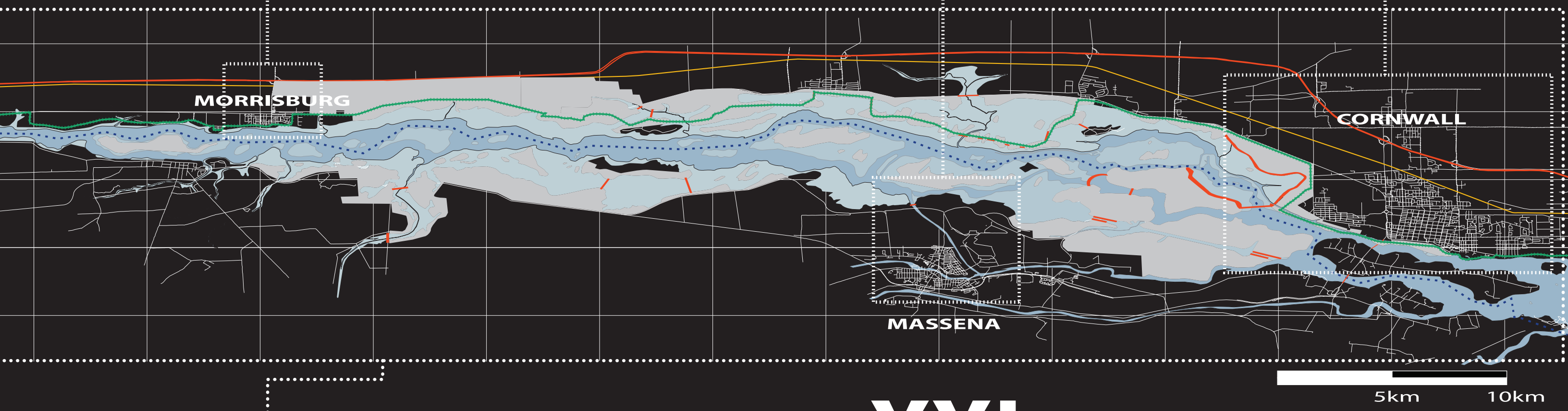
S

The S scale is the most important scale of intervention for the design proposal within the city. This is where the design proposal will enact initial tactics and cataclysms to establish a strategy of spurring human agency. The S scale offers direct interaction with the civic landscape. These direct interactions are to embolden and enhance the public experience of the site, and attempt to take back the public identity of public land.



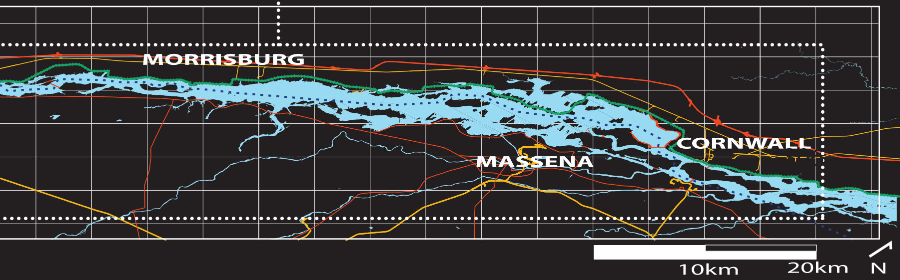
L

The L scale pertains to the towns and cities in the area of study along the St. Lawrence Seaway. The Seaway Dream and the eventual deindustrialization in this region has produced public land and brownfields along the waterfront. Each of these communities has seen their identity as waterfront communities degraded. This scale allows for the greatest societal shift in regional design.



XXL

The XXL connects the top down infrastructure of the SLS&PP with the local condition addressed in Cornwall at the S scale. This landscape requires regional strategies that focus on civic identity as well as tourism and recreation.



S

Canal Land Tactical Accupunctures

The design strategy utilizes the tactical deployment of specific interventions and strategies with the intent of restoring the community following the trauma instituted by the Seaway Project. These orchestrated moments of accupuncture of varying scale and duration seek to foster interconnections of individuals. Whether it be a singular event to celebrate the passing of a threshold, or a durative planting strategy carried out in phases, the intent is to restore agency in the civic landscape. This rebirth begins with a public funeral.


ESSED?
KEEP
CALM
AND
LANT A
TREE
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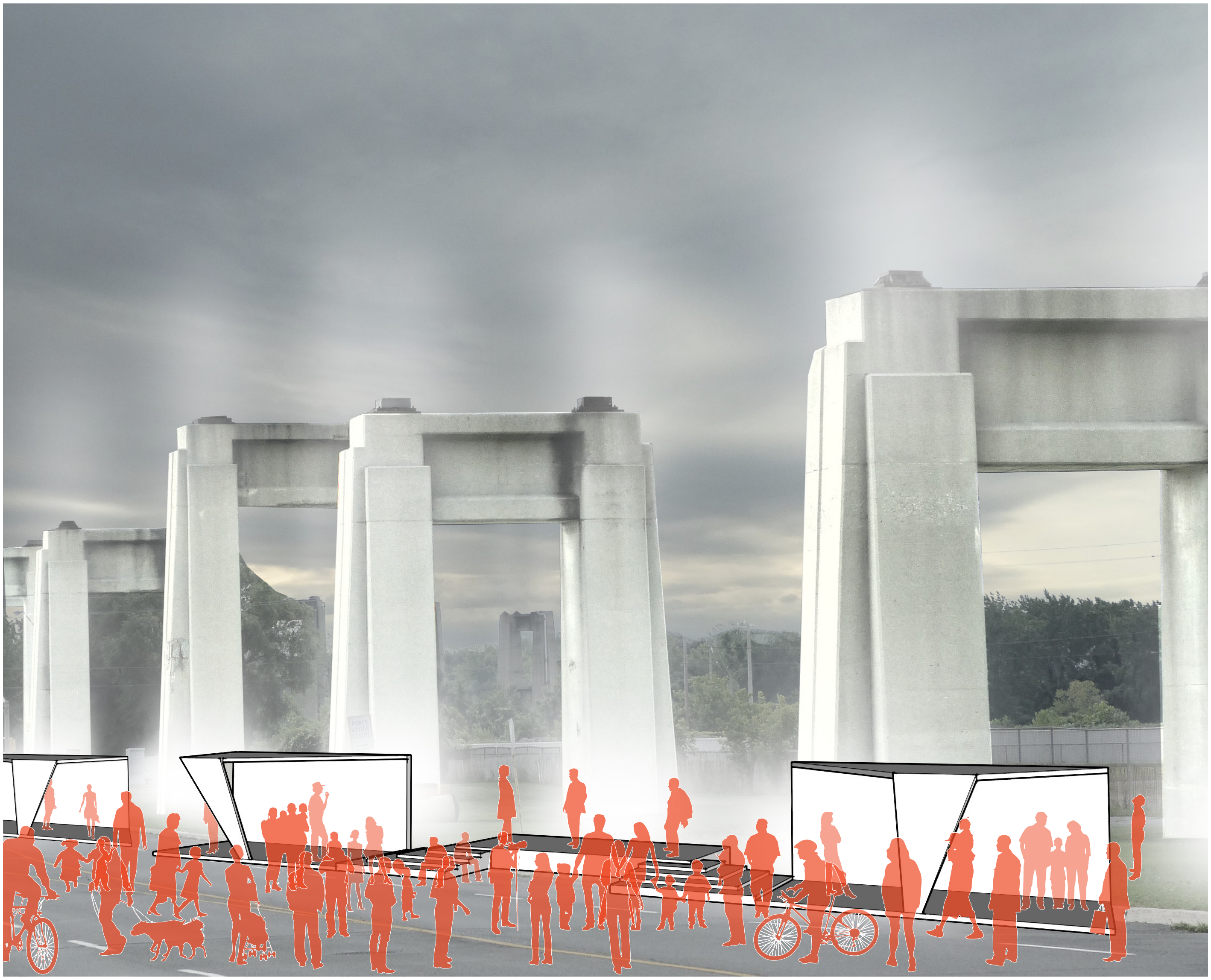
l Conservators
MAY 17th

Jane's Walk Cornwall

Public Exploration and Conversations

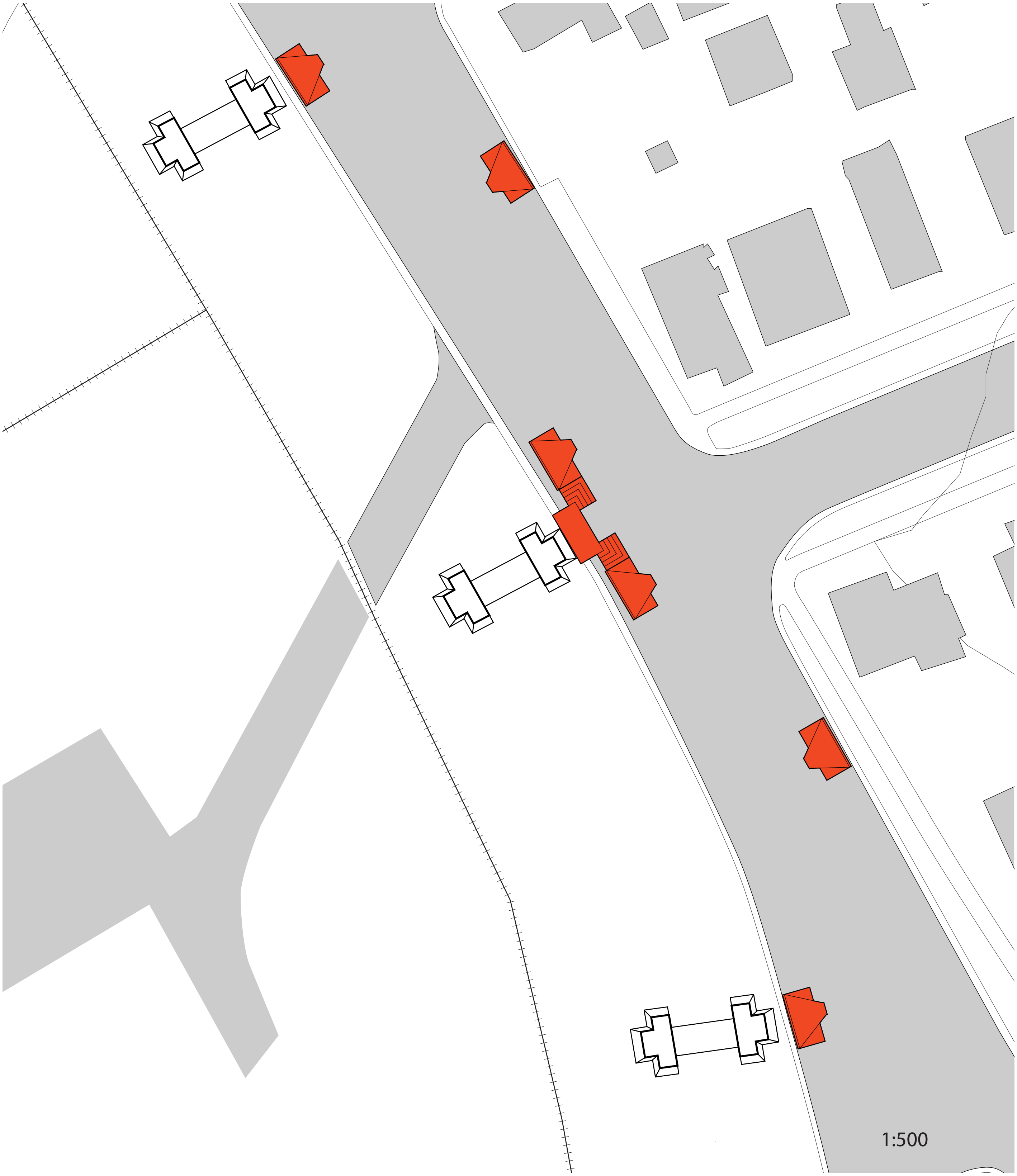
Community organizing starts with you, one person. To begin the process of building agency, a public exploration phase is required. As civic agency has been stifled, simply sending people out to explore is not an option. The exploration phase requires concentrated direction. It requires key people who are willing to lead in the exploration. They can be drawn from local experts who are engaged in their immediate neighbourhood. The key focus of the exploration phase is to get people out into the city, and start having the conversation of what all is possible if it were not for barriers and controls. Begin the conversation, and be surprised where it takes you.


A SEASONAL RECREATIONAL SPACE FOR ROAD HOCKEY AND BASKETBALL?
I WOULD LIKE TO SEE EVENING THEATRE HERE DURING THE SUMMER MONTHS!



Phase One : Initiation
Public Funeral

For over half a century, the Seaway International Bridge, of the Three Nations Crossing in Cornwall, was the tallest and largest resident of the city. Born out of the Seaway Dream of an All Canadian Seaway, the massive structure was built with a clearence of over one hundred feet. The dream of an All Canadian Seaway failed, and the bridge has stood as a testament to that. A low level replacement bridge was constructed in 2014, and the Seaway International Bridge is slated for demolition. This creates a moment for the Cornwall community to celebrate its transition from a Seaway Industrial City to its current state. The bridge was the icon of the city since its construction. There is also a dark side to the bridge's identity in the civic landscape. Soon after the bridge's completion it took its first life, an event that would be repeated several times yearly. The removal of the bridge, its broken promise, its dark existence, and its end, should be celebrated by the community. Here is an opportunity for closure, and a new beginning.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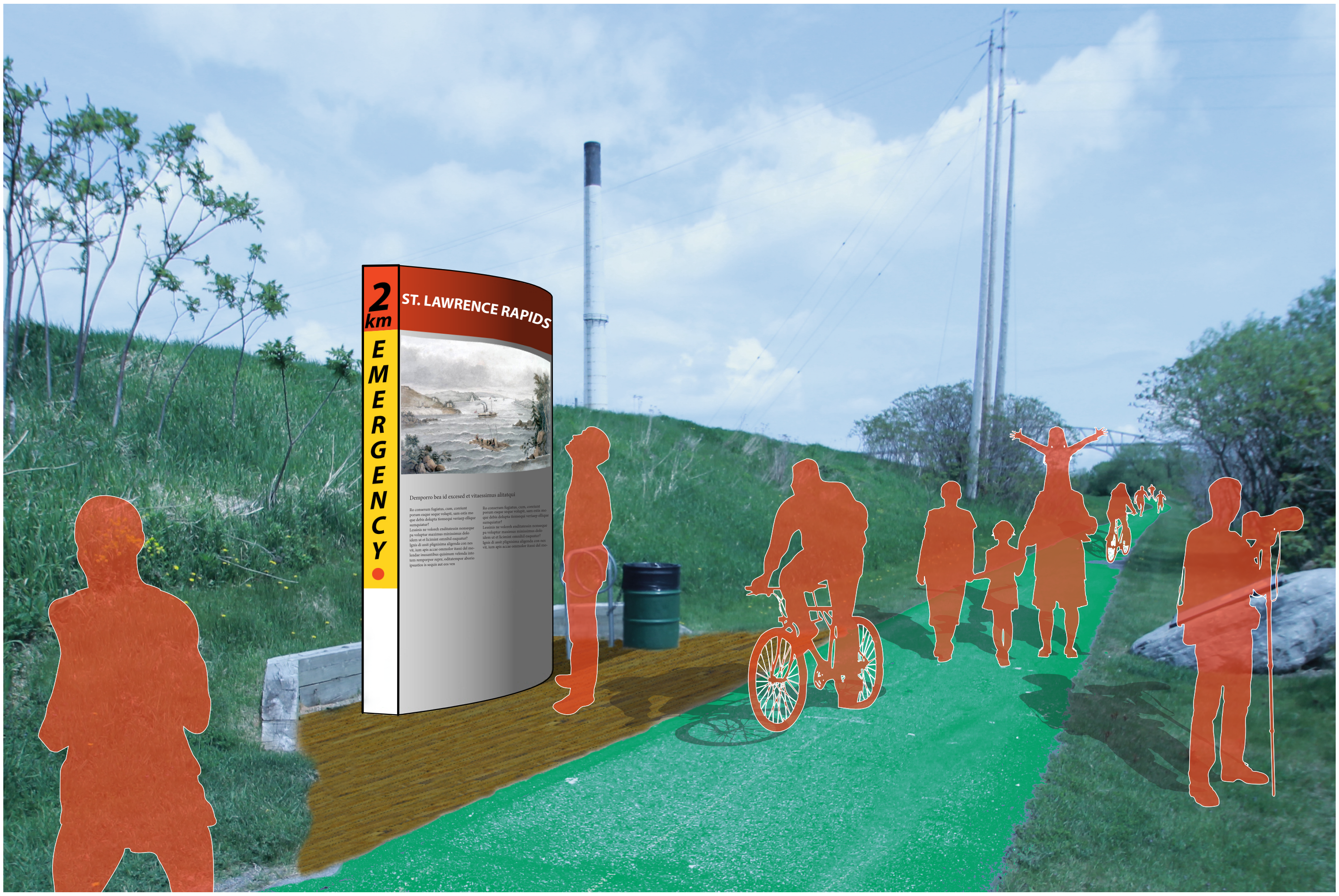
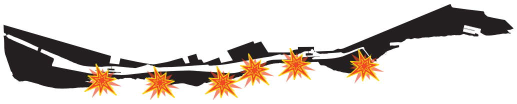
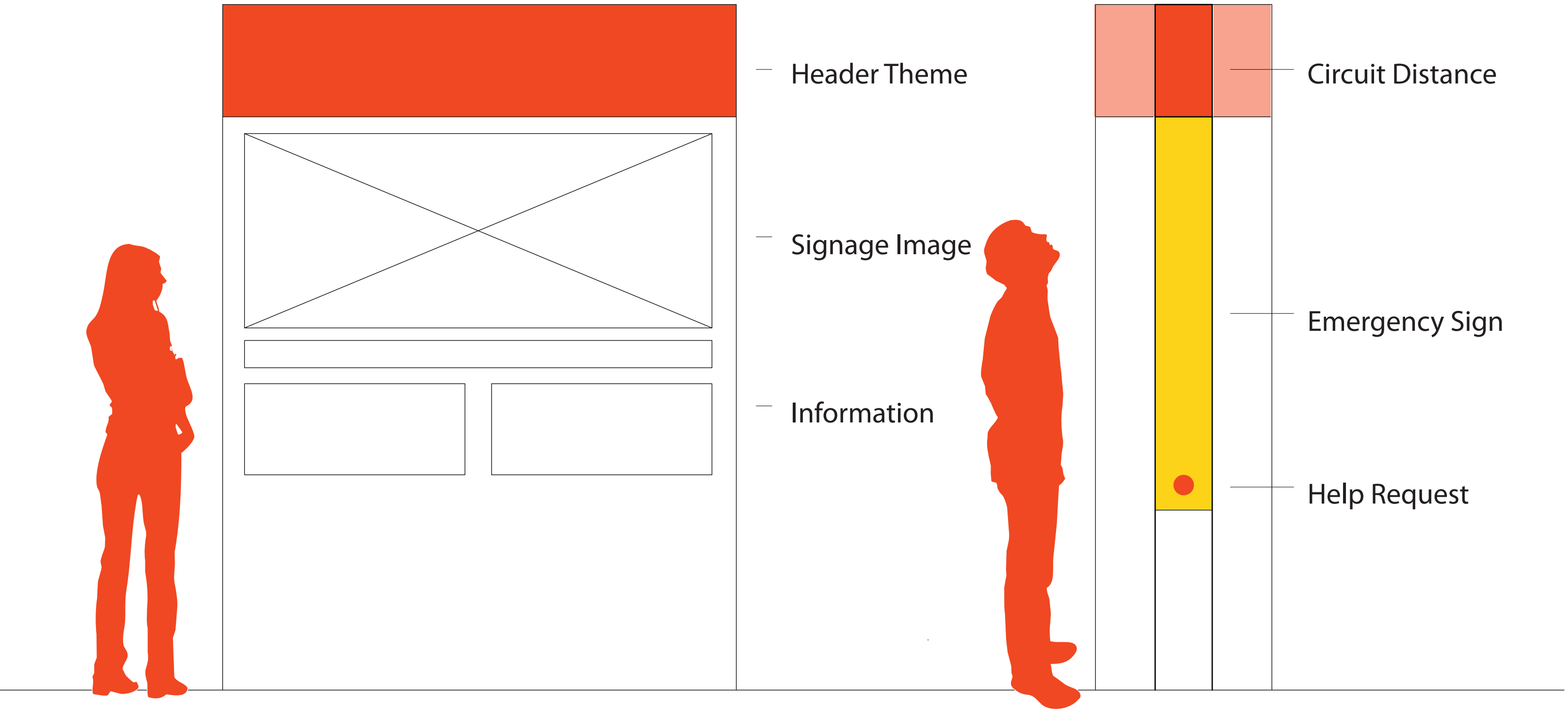
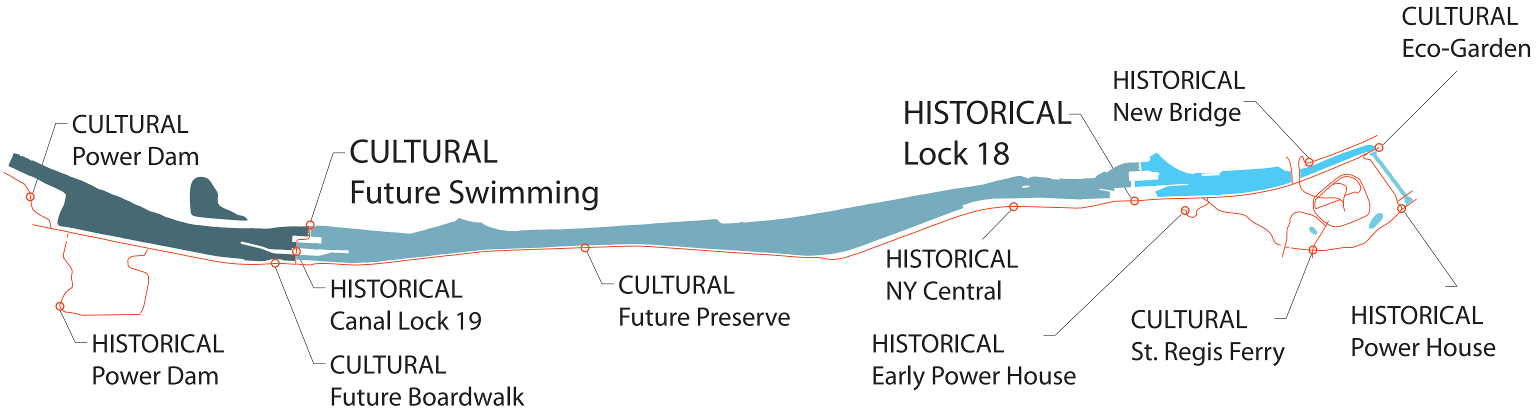


Phase One : Initiation
Wayfinding



The introduction of new routes and circulation systems is a critical part of Phase One. This starts with themed walks, and evolves into new recreational surfaces. The intent is to leverage the existing and popular Waterfront Recreational Trail as a means to introduce these new routes. The themed walks organized by the Cornwall Conservators will be an effective tool at building interpersonal connections among citizens. The feedback from these walks, what people were interested in, can be deployed in a new wayfinding strategy. Embracing the categories defined by the Cornwall Conservators, these new Wayfinding signage create an informative and detailed account of the condition and setting of the Cornwall Canal Lands. These new Wayfinding signs will inform users of ongoing projects and goals within the park. The intent is to create a better sense of community during the early stages of the overall project.

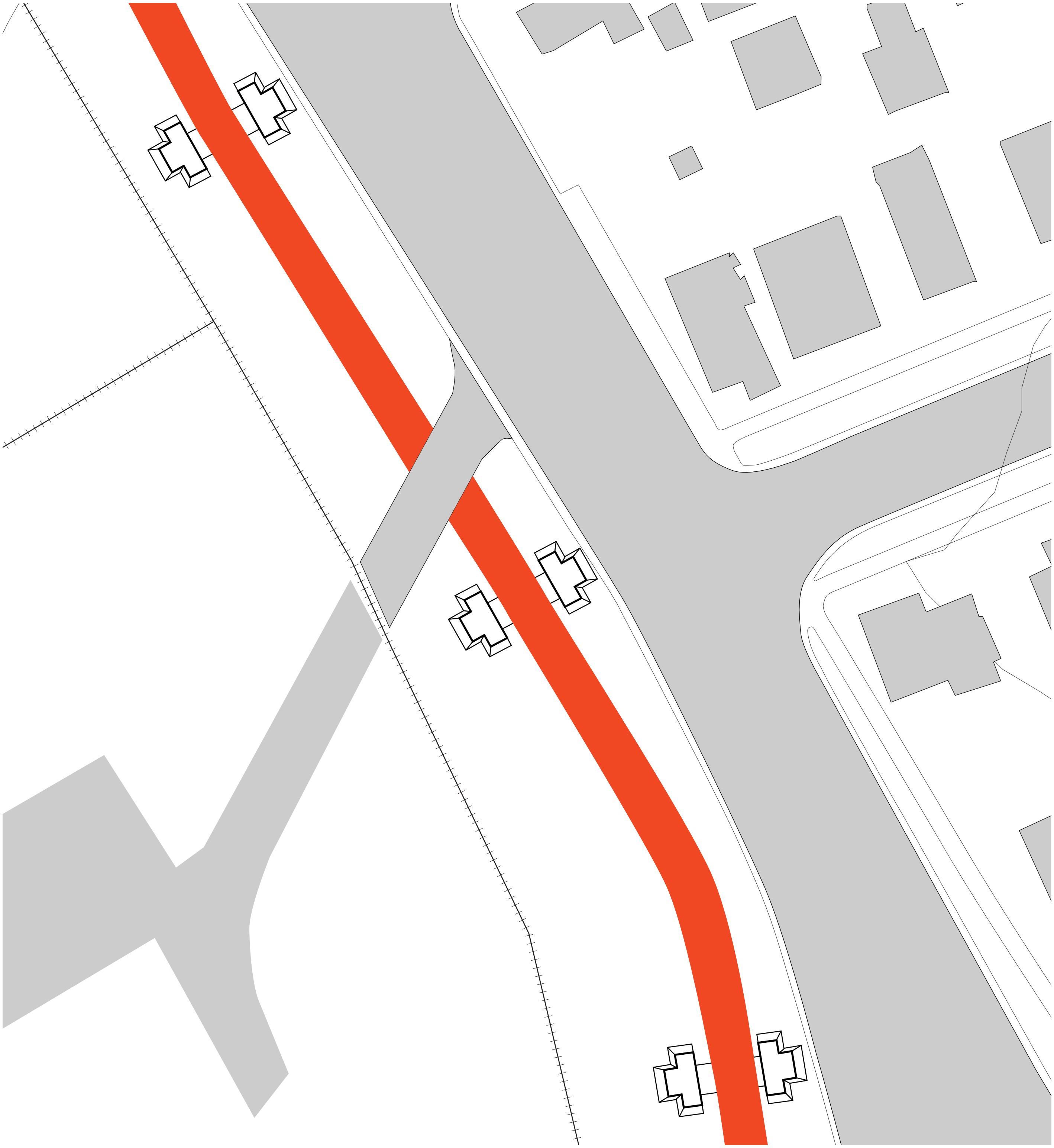

Header Theme
Signage Image
Information
Circuit Distance
Emergency Sign
Help Request


CULTURAL
Power Dam
CULTURAL
Future Swimming
HISTORICAL
Lock 18
HISTORICAL
New Bridge
CULTURAL
Eco-Garden
HISTORICAL
Power Dam
HISTORICAL
Canal Lock 19
CULTURAL
Future Boardwalk
CULTURAL
Future Preserve
HISTORICAL
NY Central
HISTORICAL
Early Power House
CULTURAL
St. Regis Ferry
HISTORICAL
Power House

1:500

Phase Two : Boundaries
Perimeter Path

The Cornwall Canal Lands are owned by the SLSMC and not the City of Cornwall. This has created fringe border lands along the Canal and the overall site. During Phase One, themed walks are meant to create new routes and circulation systems, and during the later stages of Phase One, and Phase Two these paths are to become more formalized. These new surfaces create opportunities for leisure and recreation. The Seaway International Bridge is slated for demolition, but the piers have been viewed as too costly to remove. Rather than allow this site to become abandoned and feral, the design proposal seeks to establish a new recreational path under the former bridgeway, among the concrete piers. Following the far east perimeter of the site, this perimeter path will act as a conduit from within the city down to the waterfront.



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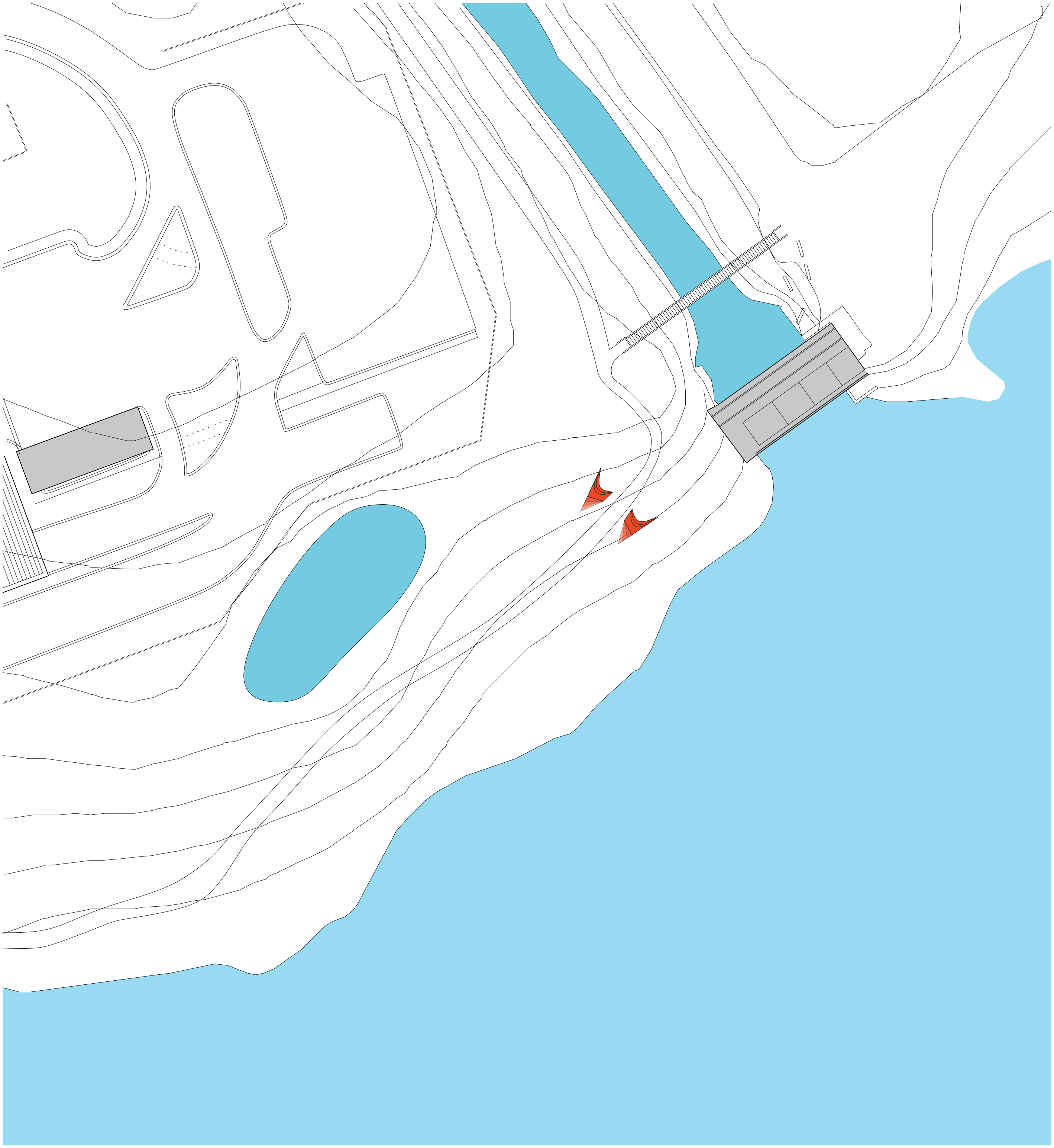
Phase Two : Boundaries Thresholds

The Cornwall Canal Lands have four thresholds of entrance. The Cornwall Conservators understand these to be critical moments for the experience of the visitor. Seizing on the opportunity to improve community, these thresholds should be focused on both announcing that the visitor has arrived at a new territory unlike any other within the city, but also that it is a place for the community. Acting as spatial collectors of activity, the thresholds themselves become community sites of action and participation. Some children play on the steps, a cyclist fills her water bottle, some office workers have lunch, a boy and girl busk for loose change. A digital counter records the daily, weekly, monthly, yearly, and lastly the overall users that have come before you. The early morning jogger is aware that even though it is 6 am he is still the 25th user to passby, while the late night crowd is there to see the numbers roll over. The message is clear, something is happening here

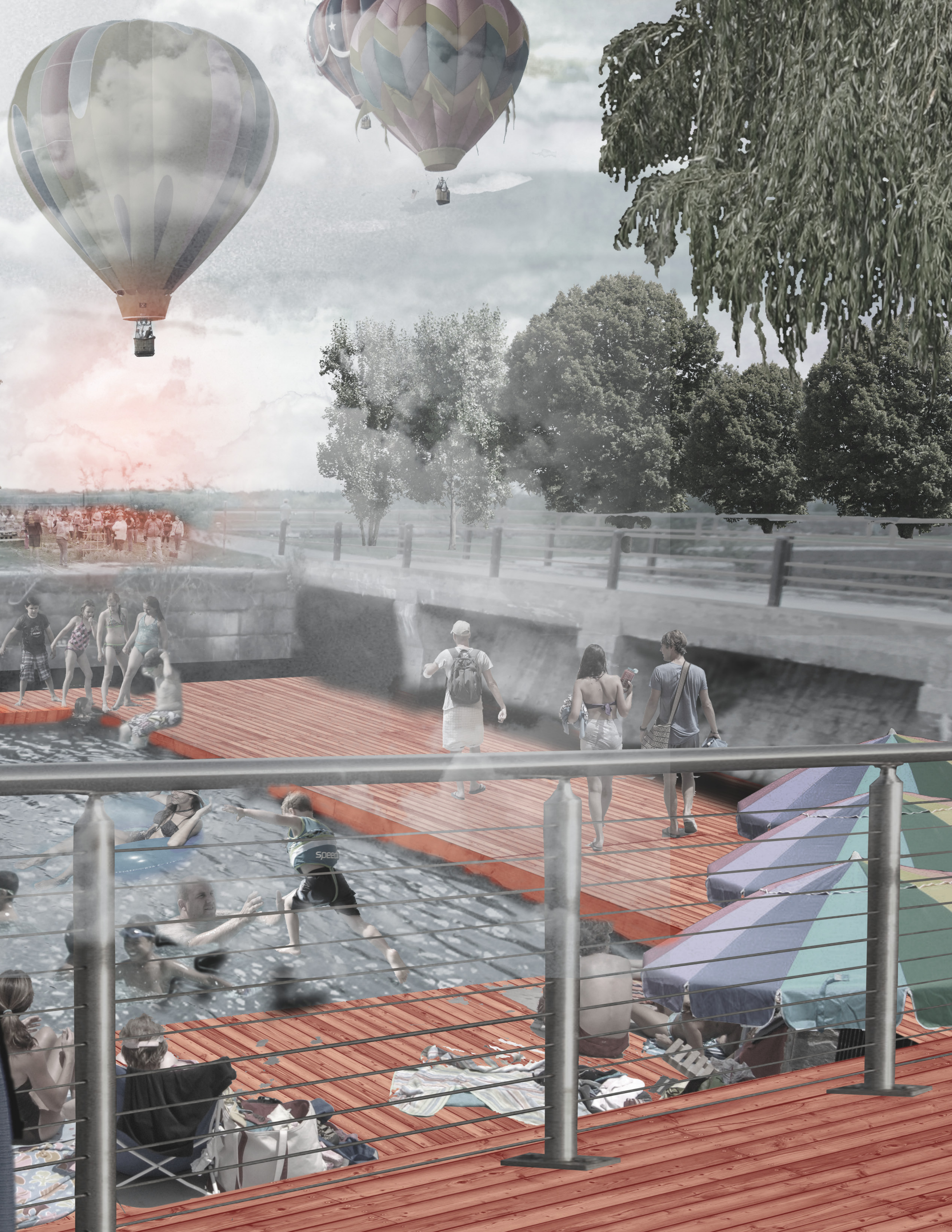


1:500

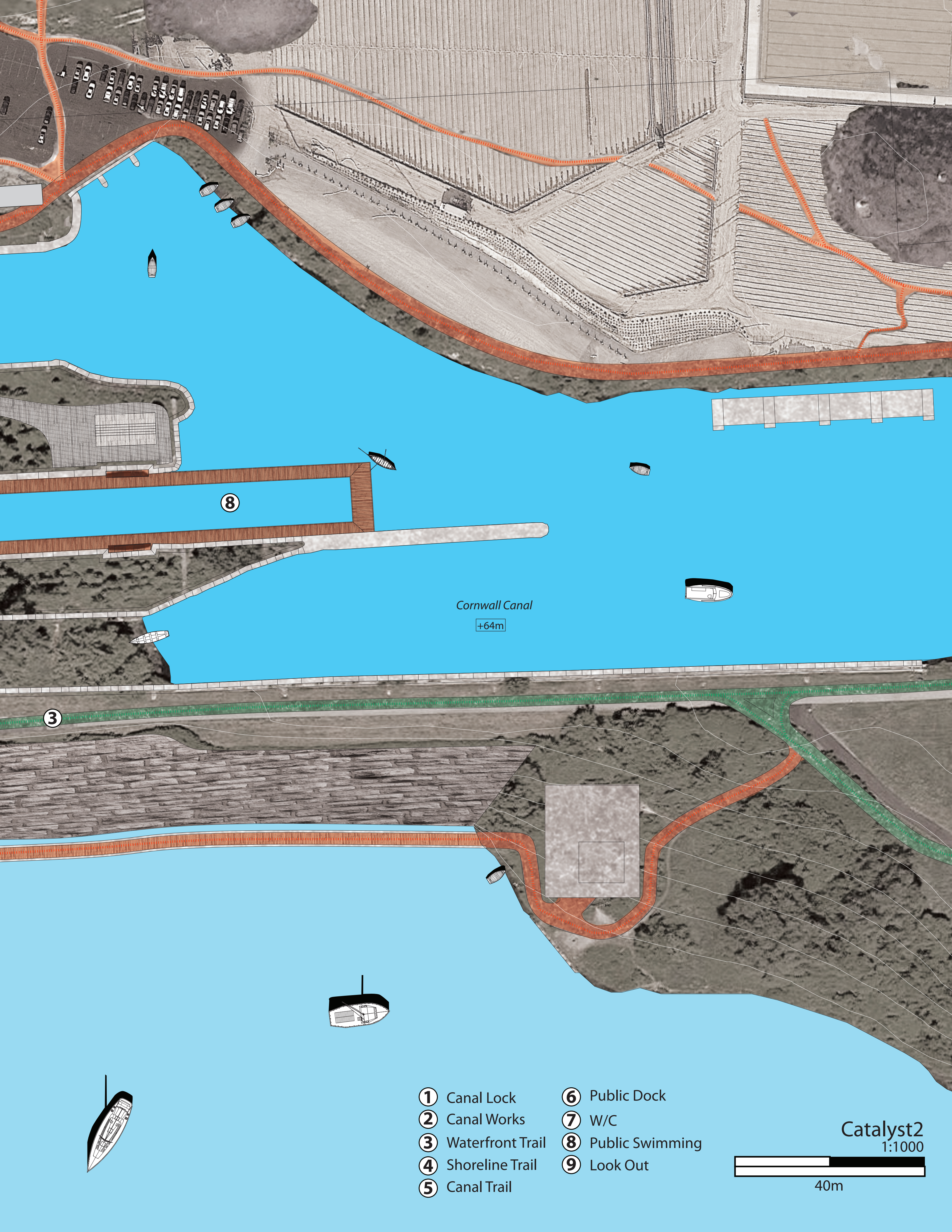

+68m
1
4


⑤
⑥
⑦
⑧
Cornwall Canal
+66m
③
②
⑨
+59m
St. Lawrence River
① Canal Lock
② Canal Works
③ Waterfront Trail
④ Shoreline Trail
⑤ Canal Trail
⑥ Public Dock
⑦ W/C
⑧ Public Swimming
⑨ Look Out
Catalyst1
1:1000
40m


UISES
ely




⑦
①
②
+66m
⑥
⑤
④
⑨
St. Lawrence River
+59m


⑧
Cornwall Canal
+64m
③
① Canal Lock
② Canal Works
③ Waterfront Trail
④ Shoreline Trail
⑤ Canal Trail
⑥ Public Dock
⑦ W/C
⑧ Public Swimming
⑨ Look Out
Catalyst2
1:1000
40m


Con
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RIO CANADA
Cornwall


1
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3
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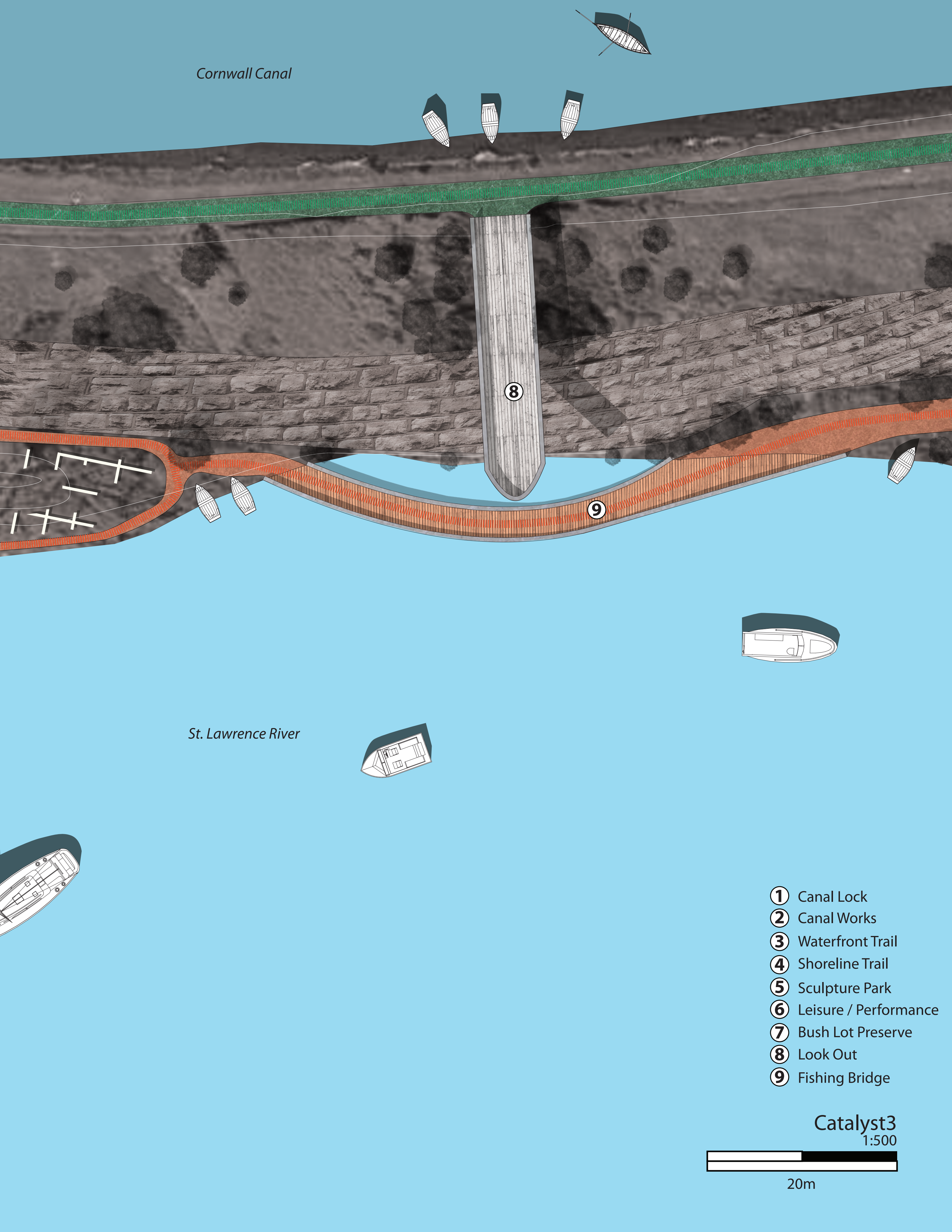
7



① Canal Lock
② Canal Works
③ Waterfront Trail
④ Shoreline Trail
⑤ Sculpture Park
⑥ Leisure / Performance
⑦ Bush Lot Preserve
⑧ Look Out
⑨ Fishing Bridge

Catalyst3
1:500

M

Cornwall Canal Lands

Along the south west shore of the city of Cornwall is the location of the Moses-Saunders Power Dam. In the shadow of this massive generating station is a piece of the city that was disregarded by the planners of the Seaway Dream. Once a landscape embroiled in the dream of an All-Canadian Seaway, the Cornwall Canal Lands have been preserved from development. The Cornwall Canal was once an industrial waterway, but that reality has passed. Today this is a forgotten part of the city. It is here that the the design strategy will foster localized agency, and regenerate the post-Seaway, post-industrial city.

M
Cornwall Canal Lands
Phase 1

Habitat / Regeneration

🟩 **Thicket Bush**
- Natural Proccesses
- Mature Growth Zone

🟩 **Nest Stand**
- Closed Off
- Natural Proccesses

🟪 **Remediation Sites**
- Phytoremediation Strategy
- Controlled Area, Limited Access

🟩 **Grove Woodlot**
- Open Public Space
- Controlled Stewardship

🟩 **Shoreline Landings**
- Public Water Access
- Controlled Stewardship

Local Agency

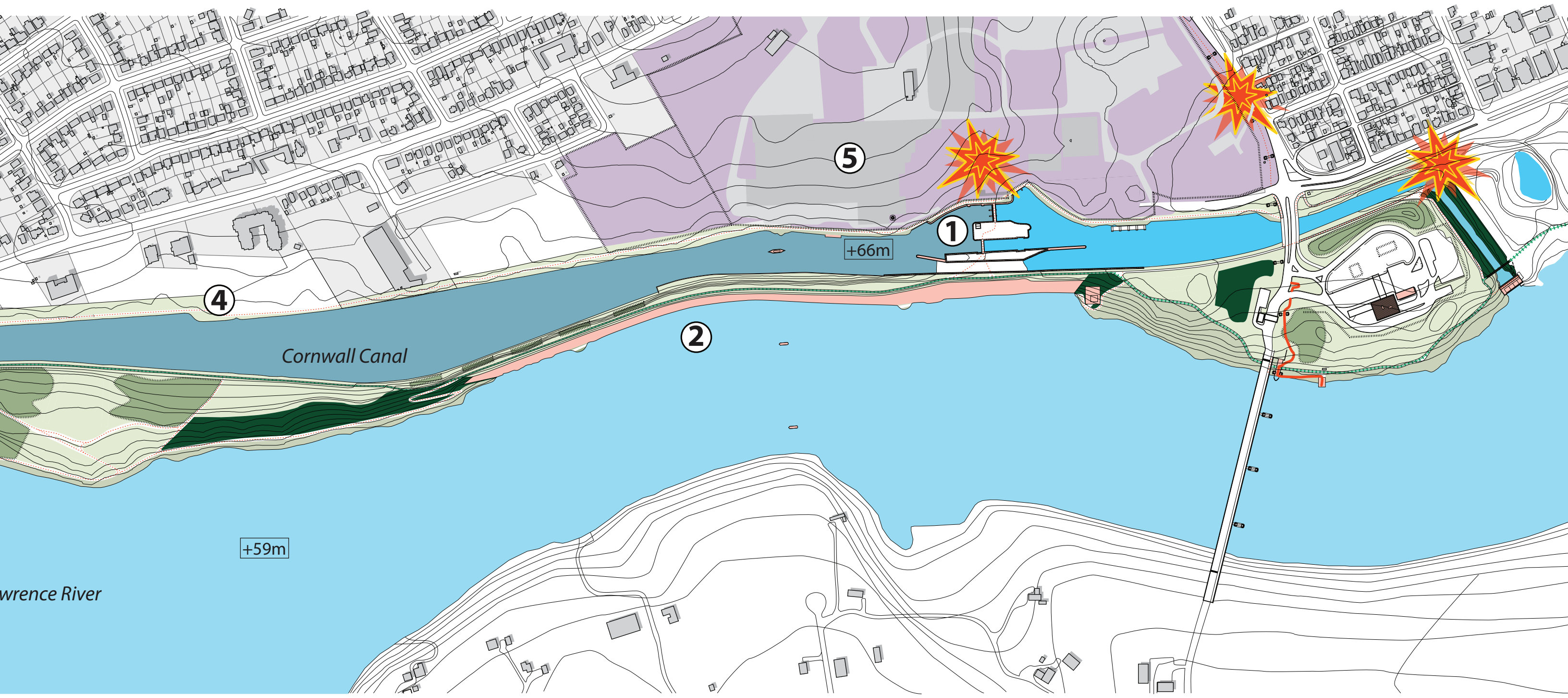
✸ **Orchestrated Events**
- Planned Public Events
- Announce New Movement

Access / Circulation

Waterfron Recreational Trail

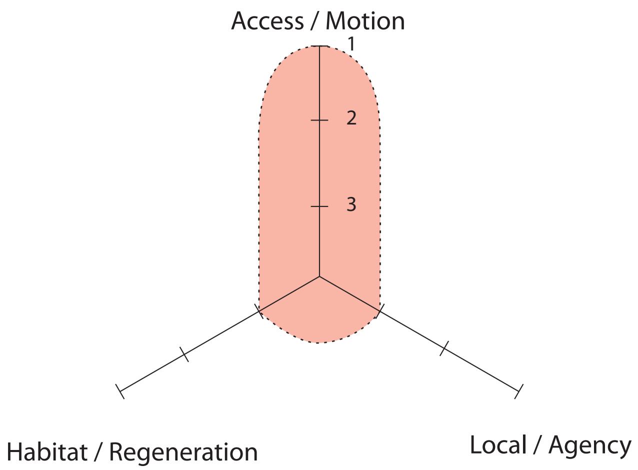
Foot Trails

Fences



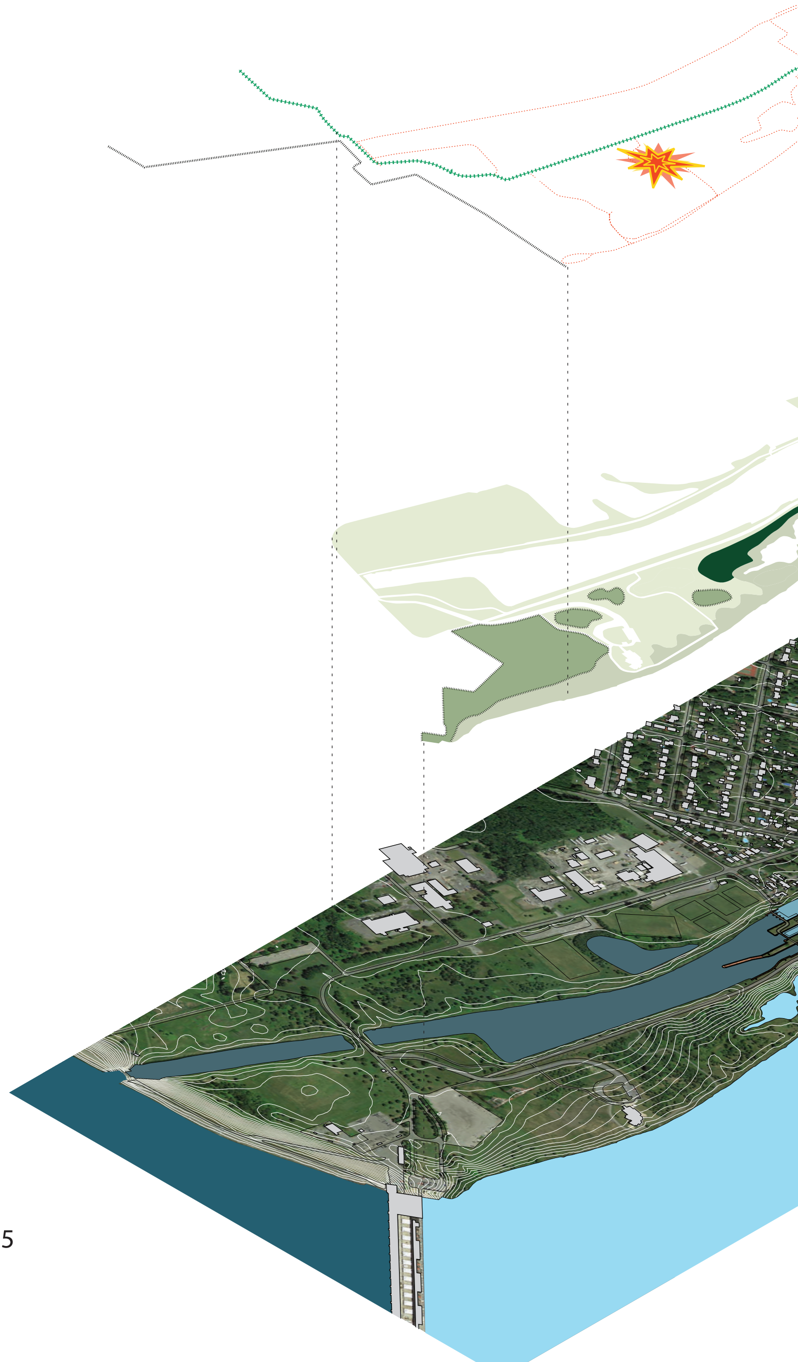
① Canal Lock
② Canal Works
③ Waterfront Trail
④ Canal Trail
⑤ Industrial Ruins

Phase 1
1:1000
40m



Phase One

Phase One begins with the a Public Funeral for the Seaway International Bridge. This is the first in a series of orchestrated events carried out by the Cornwall Conservators. The intent of these orchestrated events is to make an announcement, so that the every day citizen becomes aware of public changes along the waterfront. The existing Waterfront Recreational Trail, a popular waterfront feature in Cornwall, is augmented with additional routes. The introduction of these new routes begins with orchestrated events by the Cornwall Conservators, planned public walks that focus on a theme. These themes should reflect the categories embraced by the Cornwall Conservators. Citizens need to just show up. As the walks become more common, their routes begin to be defined and a new network of paths emerge. Community walks concerned with ecology are an initial introduction to the planting strategy of the site. A P3 with the SLSMC will allow the Cornwall Conservators to begin engaging with the Habitat / Regeneration of the site. A futher partnership with private landowners of adjacent brownfields marks the beginning of the Remediation planting strategy. The city has begun to redefine the Cornwall Canal Lands.



Access / Circulation

- ┅ **Waterfron Recreational Trail**
- ┈ **Foot Trails**
- ┈ **Fences**

Habitat / Regeneration

- 🟩 **Thicket Bush**
  - Natural Proccesses
  - Mature Growth Zone
- 🟩 **Grove Woodlot**
  - Open Public Space
  - Controlled Stewardship
- 🟩 **Nest Stand**
  - Closed Off
  - Natural Proccesses
- 🟩 **Shoreline Landings**
  - Public Water Access
  - Controlled Stewardship
- 🟪 **Remediation Sites**
  - Phytoremediation Strategy
  - Controlled Area, Limited Access

Local Agency

- ✸ **Orchestrated Events**
  - Planned Public Events
  - Announce New Movement

M
Cornwall Canal Lands
Phase 2

Habitat / Regeneration

🟩 **Thicket Bush**
- Natural Proccesses
- Mature Growth Zone

🟩 **Nest Stand**
- Closed Off
- Natural Proccesses

🟪 **Remediation Sites**
- Phytoremediation Strategy
- Controlled Area, Limited Access

🟩 **Grove Woodlot**
- Open Public Space
- Controlled Stewardship

🟩 **Shoreline Landings**
- Public Water Access
- Controlled Stewardship

Local Agency

🟨 **Cataclysms**
- Initial concentrated public offerings
- Orchestrated Sites

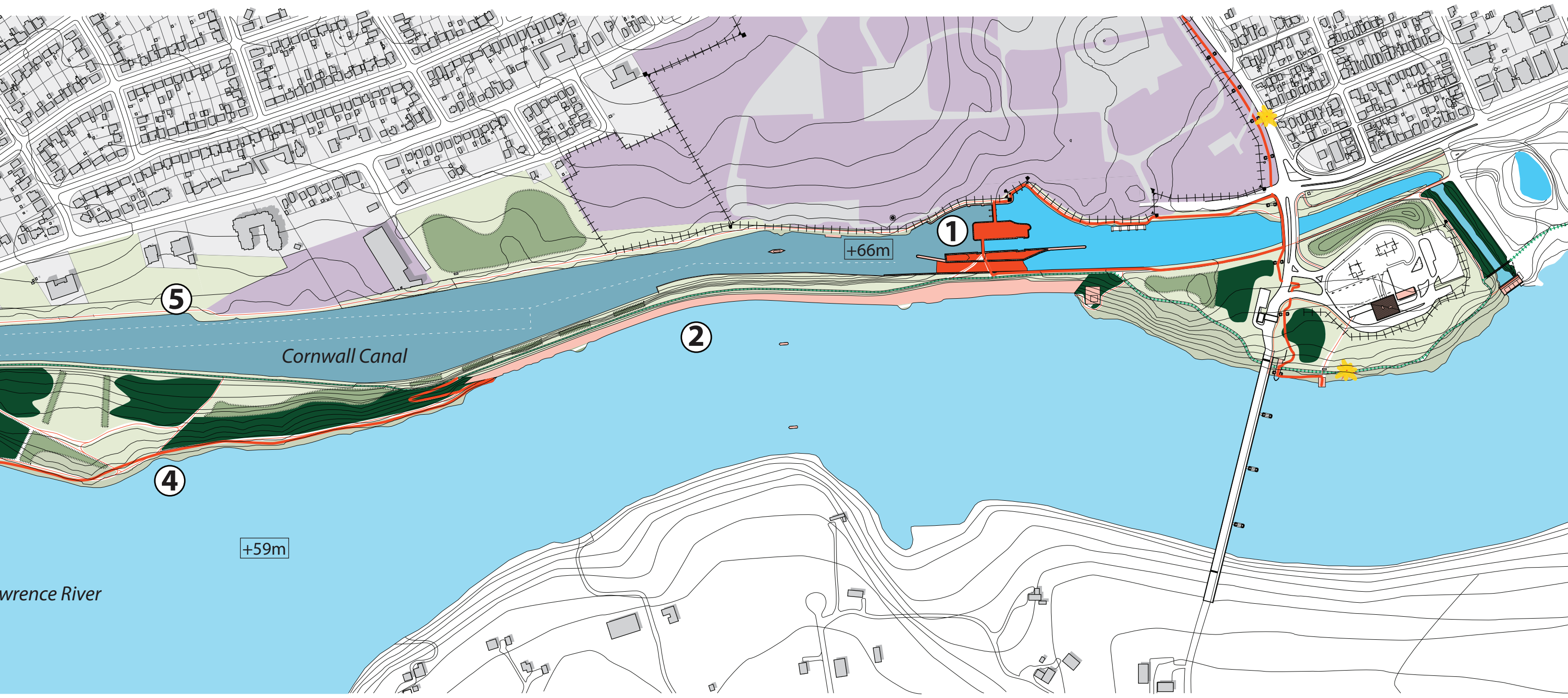
🟥 **Citizen Directed Areas**
- Public Offerings
- Inform Future Development eg. new city district

Access / Circulation

┄ **Waterfron Recreational Trail**

┄ **Foot Trails**

┄ **Fences**

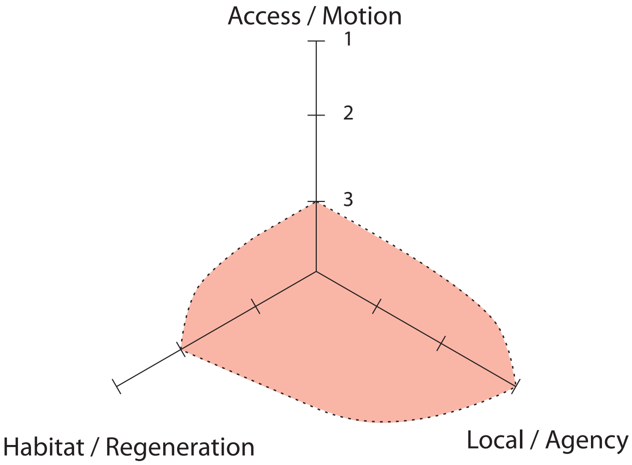


① Canal Lock
② Canal Works
③ Waterfront Trail
④ Shoreline Trail
⑤ Canal Trail
⑥ Public Swimming
⑦ Look Out

Phase 2

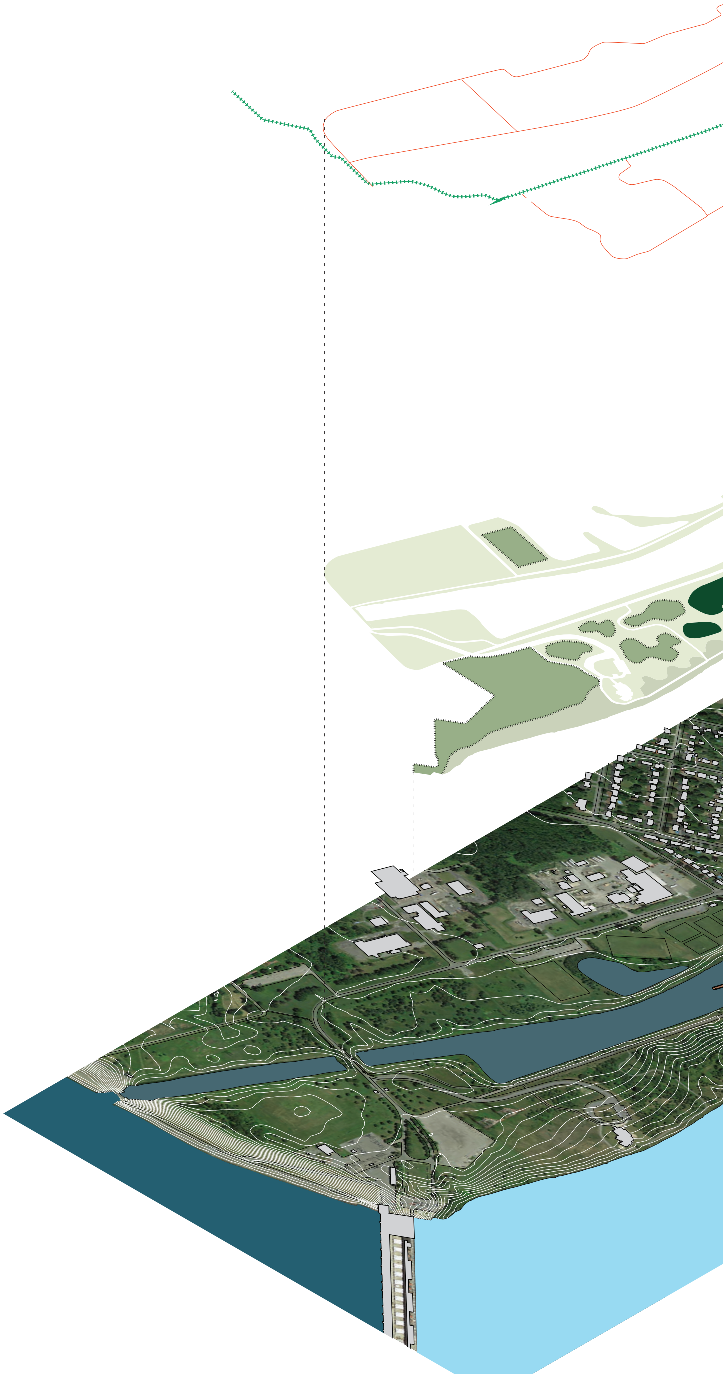
1:1000

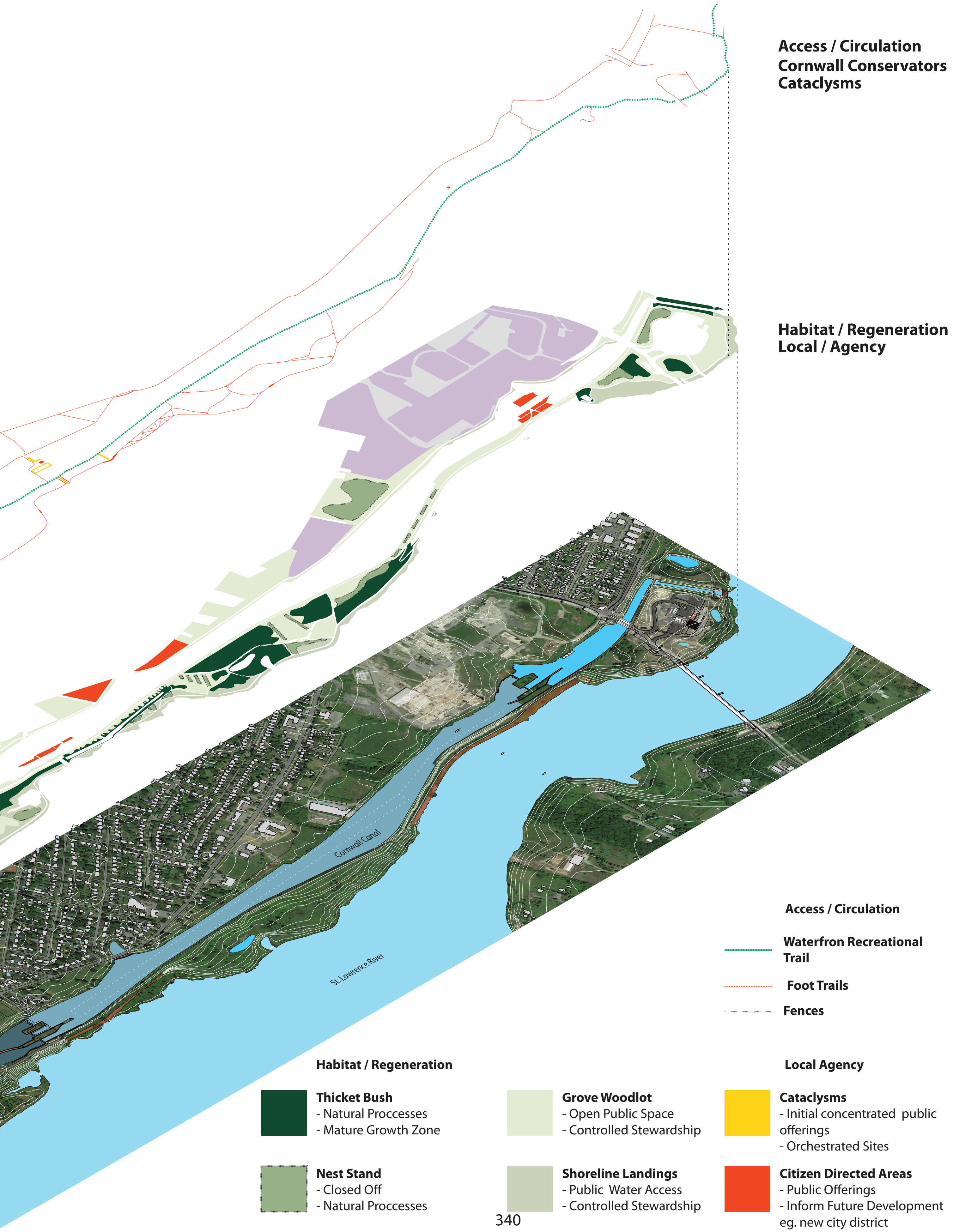
40m



Phase Two

There is now momentum in the civic landscape. The citizens of Cornwall are now positively charged in engaging the Cornwall Canal Lands site. The orchestrated events from Phase One have begun to open the public's perception of what is possible. To capitalize on this public awareness, the Cornwall Conservators begin to introduce their own cataclysms. These signature projects assist in building trust between the citizenry and the Cornwall Conservators. With public trust being earned through public performance, the Cornwall Conservators CityLabs program is introduced. This program now turns over the spatial opportunities of the site to the citizens, being carefully curated and overseen by the Cornwall Conservators. The public projects introduced are a product of the ongoing research and development of public ideas from the Cornwall Conservators storefront and weekly public forum. Additional routes and connections are introduced on the site, as well as infrastructure, as required. Additional and new plantings are introduced according to the phased strategy. New programs will attract new users who will become engaged with the Cornwall Conservators. Citizens are now building new interpersonal connections on the site.





Access / Circulation
Cornwall Conservators
Cataclysms

Habitat / Regeneration
Local / Agency

Access / Circulation

- ⋯ **Waterfron Recreational Trail**
- ⋯ **Foot Trails**
- ⋯ **Fences**

Habitat / Regeneration

🟩 **Thicket Bush**
- Natural Proccesses
- Mature Growth Zone

🟩 **Nest Stand**
- Closed Off
- Natural Proccesses

🟪 **Remediation Sites**
- Phytoremediation Strategy
- Controlled Area, Limited Access

⬜ **Grove Woodlot**
- Open Public Space
- Controlled Stewardship

⬜ **Shoreline Landings**
- Public Water Access
- Controlled Stewardship

Local Agency

🟨 **Cataclysms**
- Initial concentrated public offerings
- Orchestrated Sites

🟥 **Citizen Directed Areas**
- Public Offerings
- Inform Future Development eg. new city district

M
Cornwall Canal Lands
Phase 3

Habitat / Regeneration

🟩 **Thicket Bush**
- Natural Proccesses
- Mature Growth Zone

🟩 **Nest Stand**
- Closed Off
- Natural Proccesses

🟪 **Remediation Sites**
- Phytoremediation Strategy
- Controlled Area, Limited Access

⬜ **Grove Woodlot**
- Open Public Space
- Controlled Stewardship

⬜ **Shoreline Landings**
- Public Water Access
- Controlled Stewardship

Local Agency

🟨 **Cataclysms**
- Initial concentrated public offerings
- Orchestrated Sites

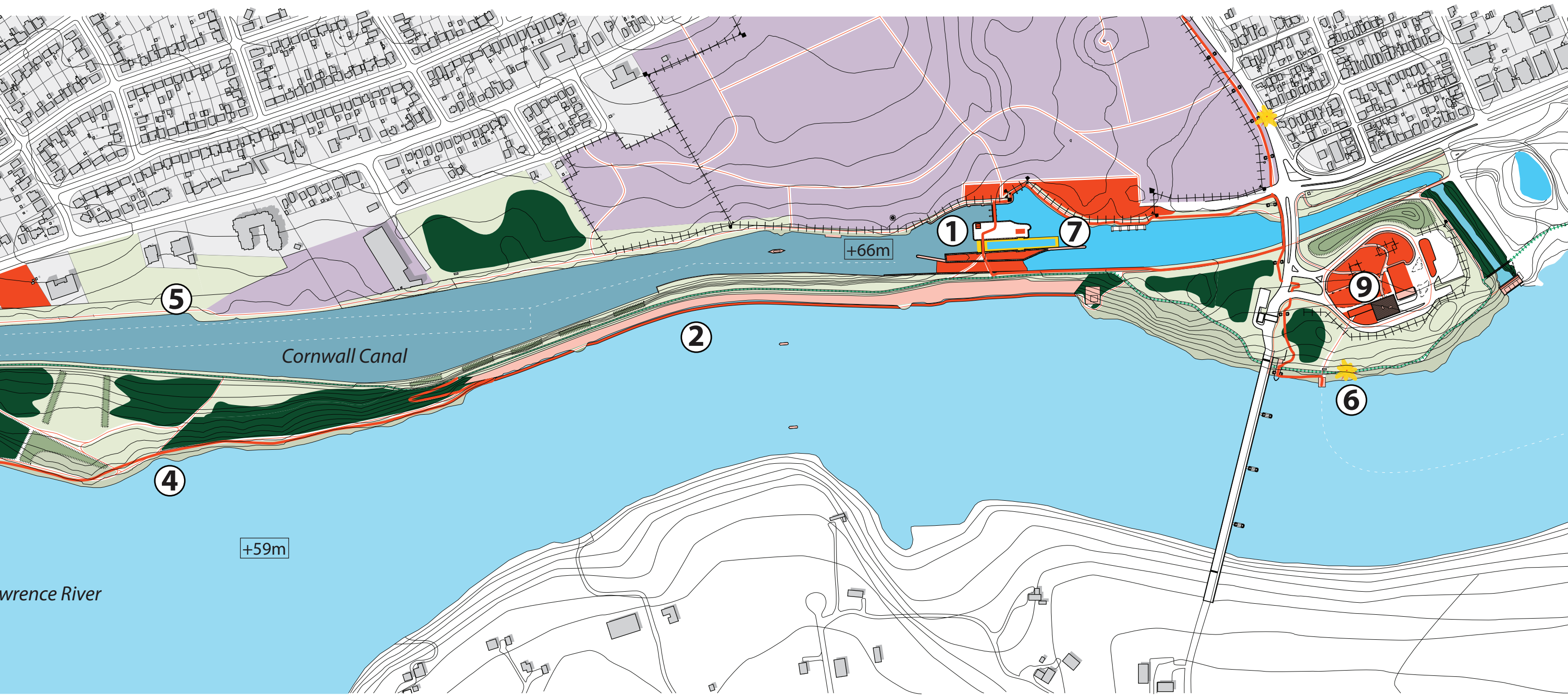
🟥 **Citizen Directed Areas**
- Public Offerings
- Inform Future Development eg. new city district

Access / Circulation

⋯ **Waterfron Recreational Trail**

⋯ **Foot Trails**

⋯ **Fences**

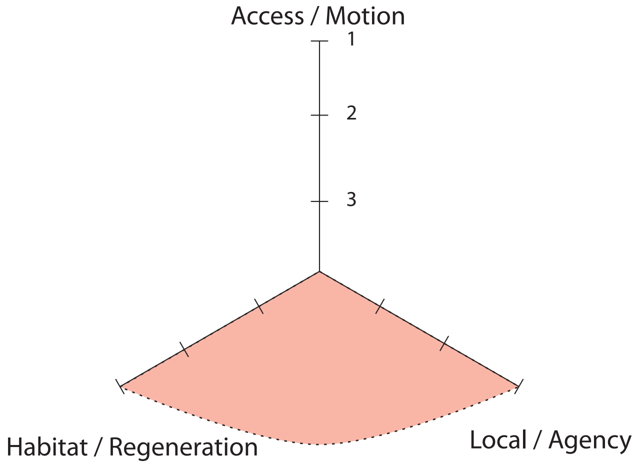


① Canal Lock
② Canal Works
③ Waterfront Trail
④ Shoreline Trail
⑤ Canal Trail
⑥ Ferry to St. Regis, Quebec
⑦ Public Swimming
⑧ Look Out
⑨ Three Nations Friendship Centre

Phase 3

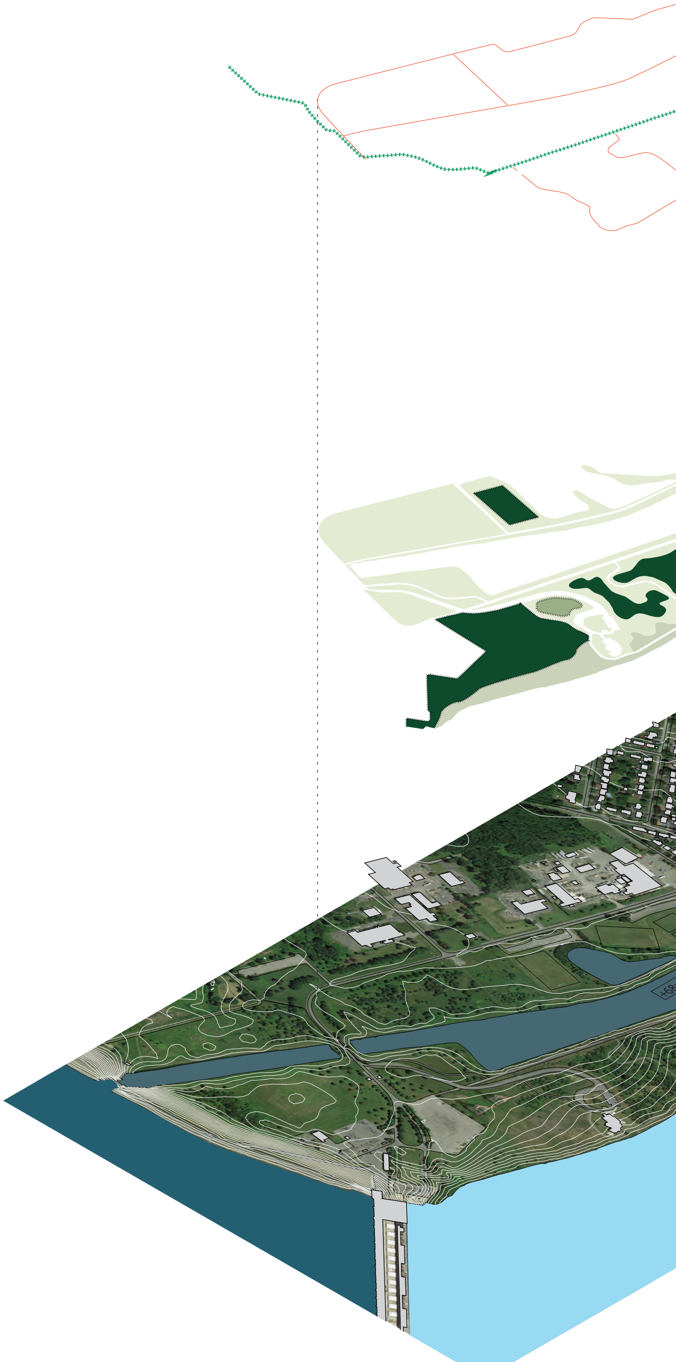
1:1000

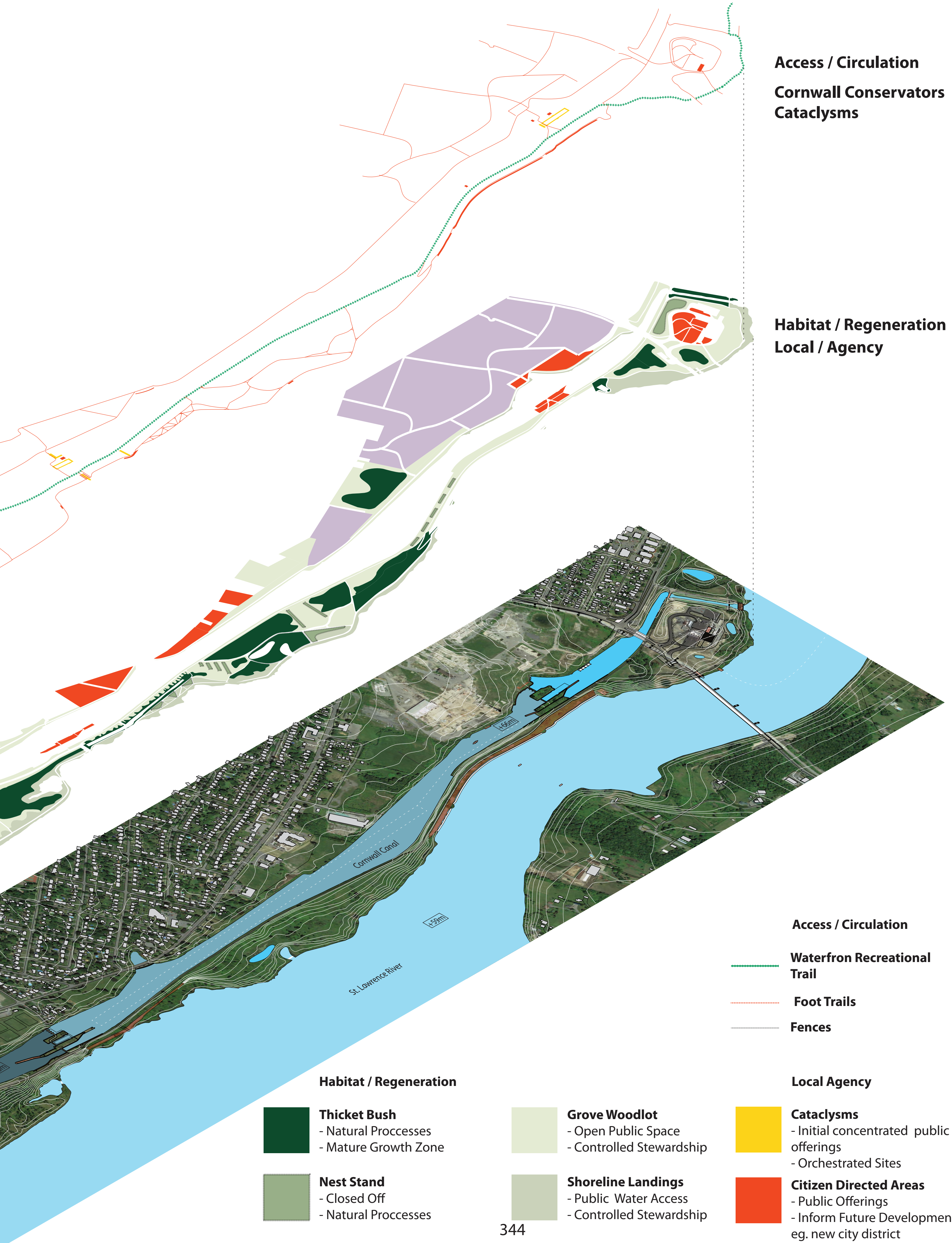
40m



Phase Three

By the end of Phase Two, all new access and motion networks are established. The successive planting strategy of Habitat / Regeneration is ongoing, and new species are beginning to appear as the initial Phase One propagations are beginning to mature and the natural processes fully begin. The Remediation planting strategy is ongoing, but the sites have become a hallmark of the community with seasonal festivals aimed at celebrating the legacy and heritage of these sites. The Cornwall Conservators are still carrying out signature cataclysms, but this role has subsided with the rise of citizen-initiated projects within the CityLab strategy. The Cornwall Conservators Storefront and the weekly public forum have become a staple within the community. Phase Three is defined by the rise of localized agency. The successes and failures from the introduction of CityLabs during Phase Two have furthered and refined this experiment. Citizens of Cornwall now have an understanding of their own capabilities. Further CityLab sites have come online, and new citizen actors are joining the cause. The success of the program has attracted new users from outside the community and the attention of the nearby cities.





Access / Circulation

- **Waterfron Recreational Trail**
- **Foot Trails**
- **Fences**

Habitat / Regeneration

🟩 **Thicket Bush**
- Natural Proccesses
- Mature Growth Zone

🟩 **Nest Stand**
- Closed Off
- Natural Proccesses

🟪 **Remediation Sites**
- Phytoremediation Strategy
- Controlled Area, Limited Access

⬜ **Grove Woodlot**
- Open Public Space
- Controlled Stewardship

⬜ **Shoreline Landings**
- Public Water Access
- Controlled Stewardship

Local Agency

🟨 **Cataclysms**
- Initial concentrated public offerings
- Orchestrated Sites

🟥 **Citizen Directed Areas**
- Public Offerings
- Inform Future Development eg. new city district

L

Cornwall, Ontario

The final city along the St. Lawrence international border segment is the former Seaway City, Cornwall. Cornwall is ground zero for the trauma produced by the Seaway Project. As such, and reflective of the analysis carried out in Section2, Cornwall is the test site for the design proposal. Today, Cornwall is a city under transition. Economically, the shift from manufacturing to the service industry is unique within the region. Historic former industrial sites are now brownfields along the waterfront. The Seaway Project produced a public waterfront, but the community is developing towards the 401 Highway. Cornwall is the largest community along the St. Lawrence international border region, making it an ideal site to test the new design strategy.

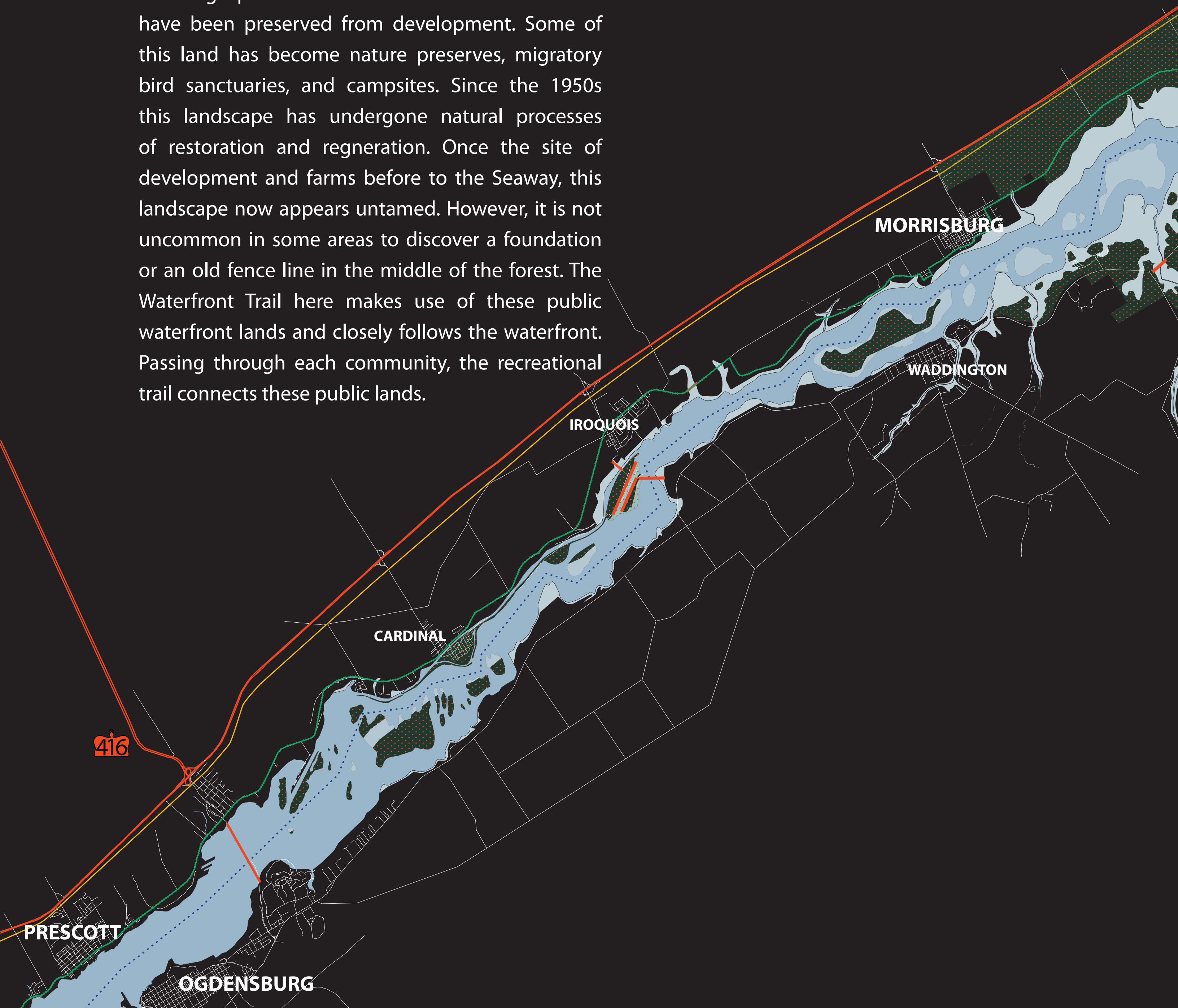
Post Seaway City: Cornwall

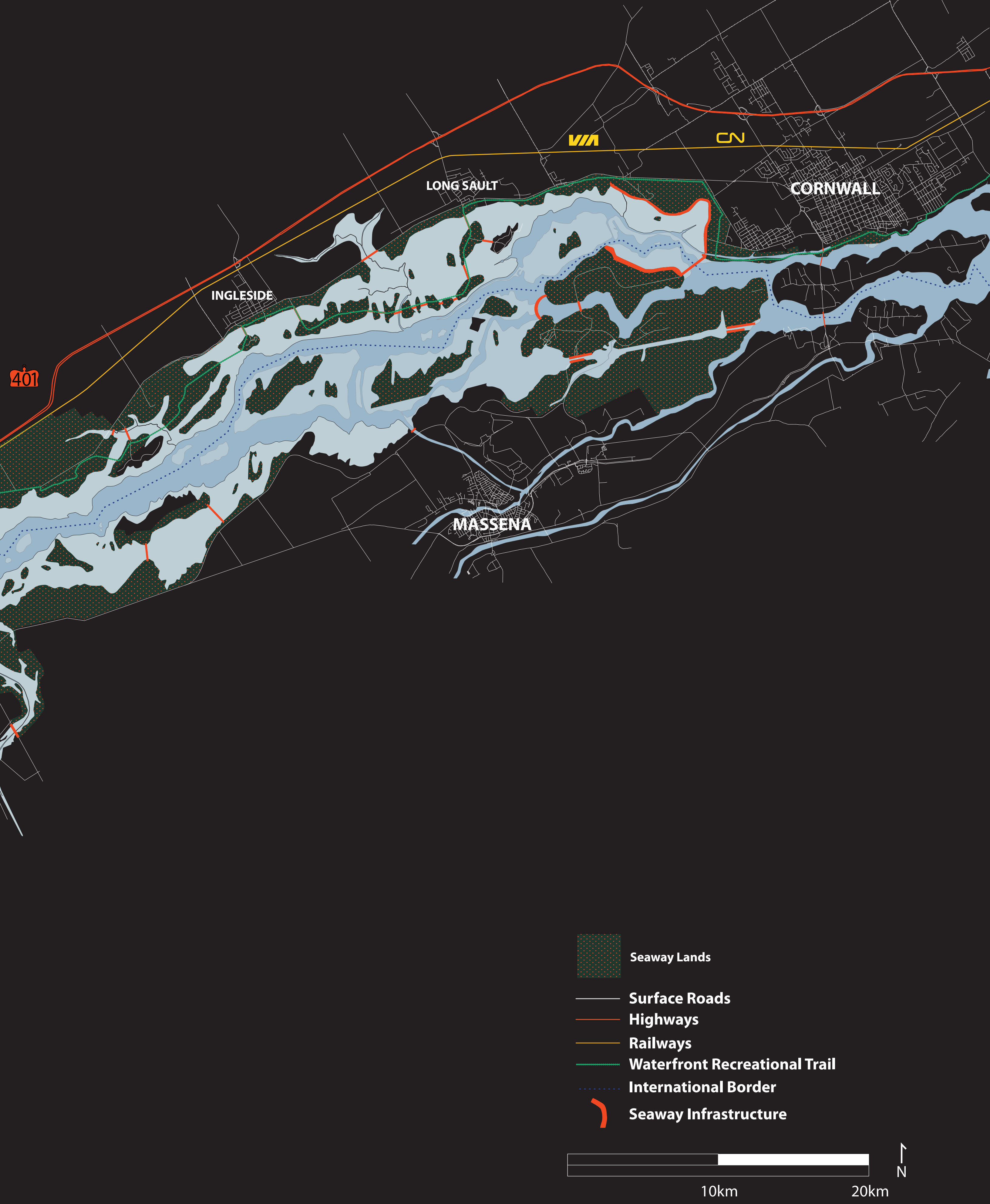

Ontario
Quebec
CANADA

XL

Seaway Lanscape Park

The physical change to landscape produced by the SLS&PP extends from Prescott to Cornwall. This is the site of the Seaway Valley. Extending 70 kms in length, this is the area that was most affected by the Seaway Dream. A side effect produced by the SLS&PP was that large portions of waterfront land and islands have been preserved from development. Some of this land has become nature preserves, migratory bird sanctuaries, and campsites. Since the 1950s this landscape has undergone natural processes of restoration and regneration. Once the site of development and farms before to the Seaway, this landscape now appears untamed. However, it is not uncommon in some areas to discover a foundation or an old fence line in the middle of the forest. The Waterfront Trail here makes use of these public waterfront lands and closely follows the waterfront. Passing through each community, the recreational trail connects these public lands.




VIA
CN
LONG SAULT
CORNWALL
INGLESIDE
401
MASSENA
Seaway Lands
Surface Roads
Highways
Railways
Waterfront Recreational Trail
International Border
Seaway Infrastructure
10km
20km
N

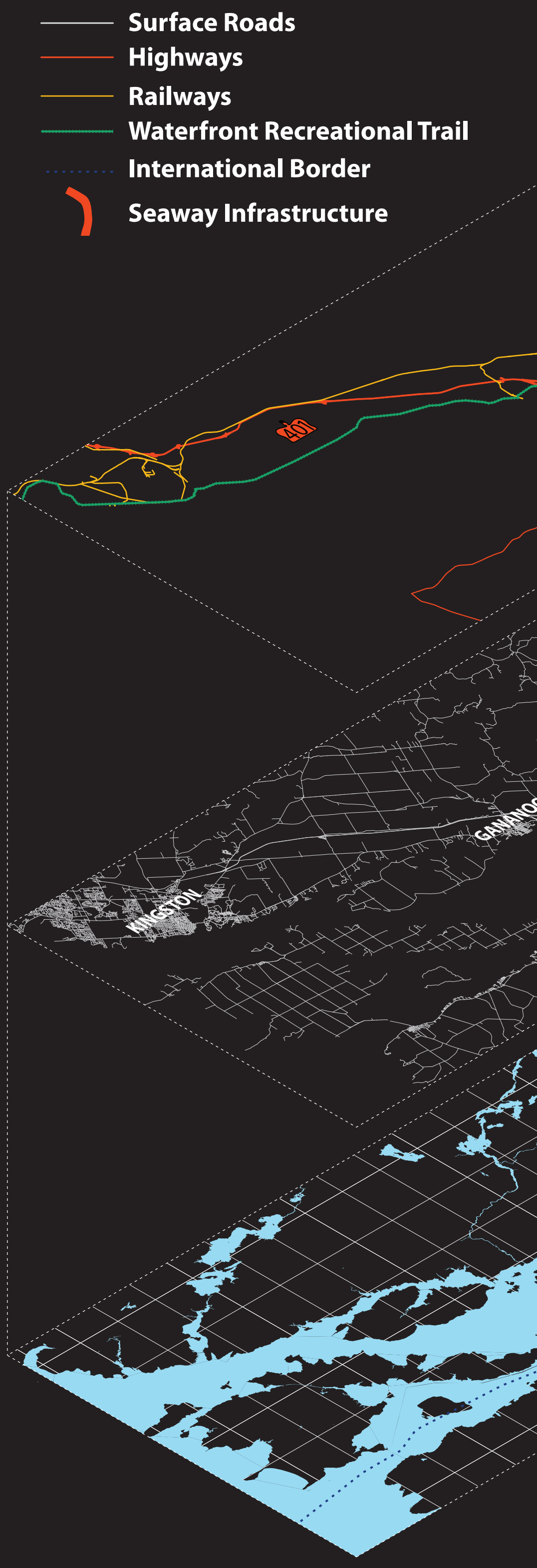
XXL

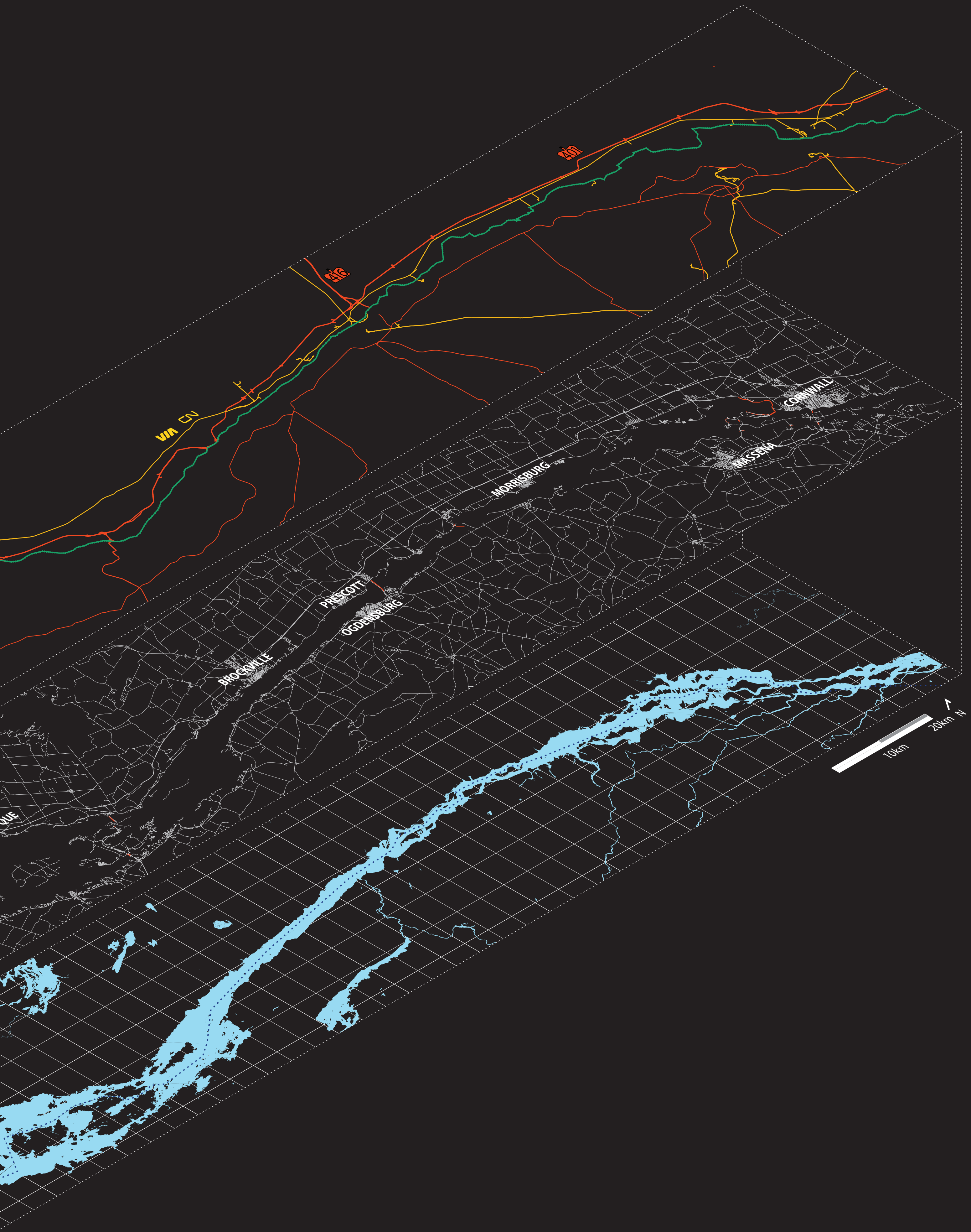
St. Lawrence International Border Region

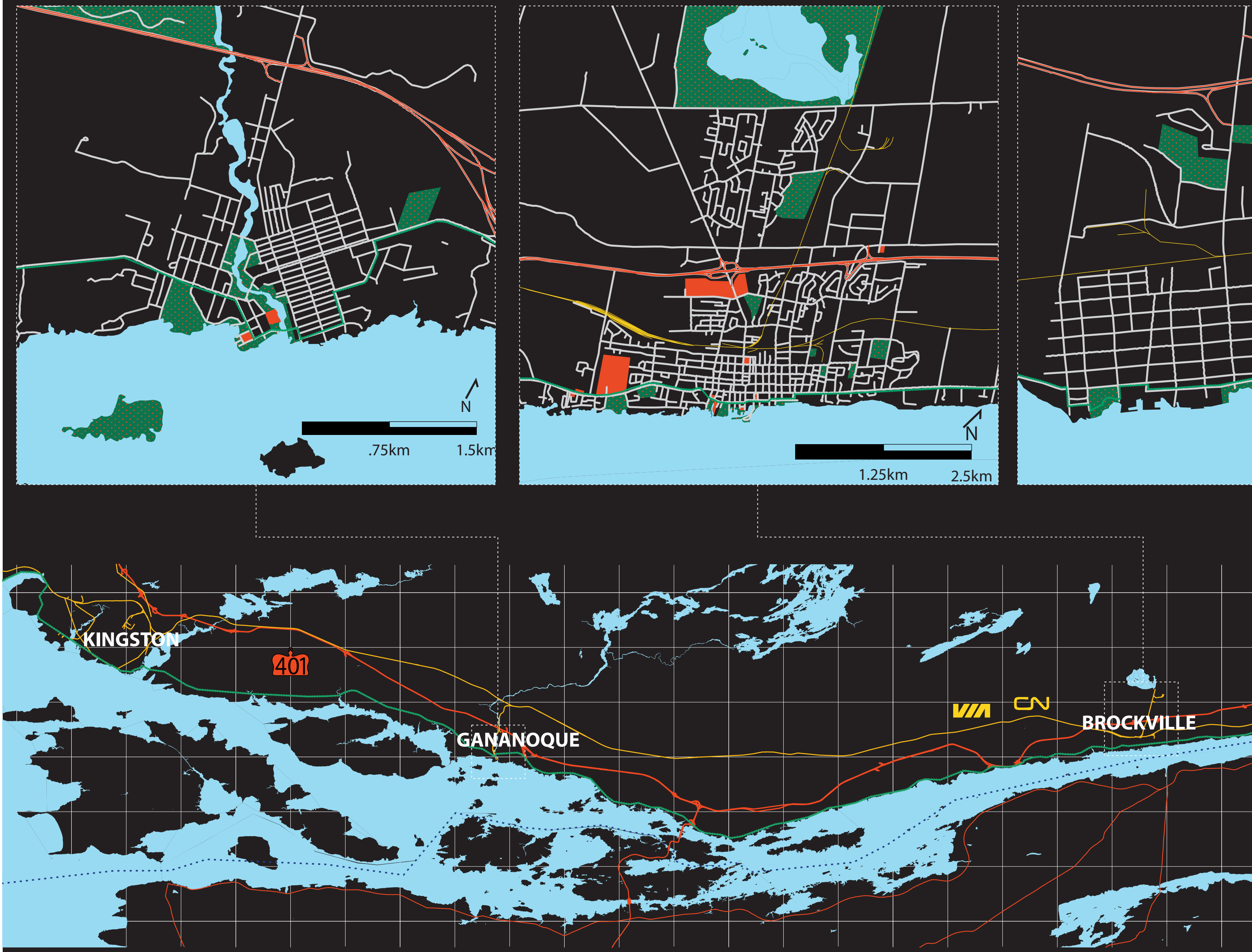
The communities along the St. Lawrence international border region and strung along the river likes pearls on a necklace, owing to their origin as waterfront communities. Today the river's prominence in these communities has faded, but new networks have been built that make these communities more interconnected than ever before. Now connected along the river via highways, freeways, railways, and the Waterfront Trail, this region is suited to emerge as an interconnected rhizome.

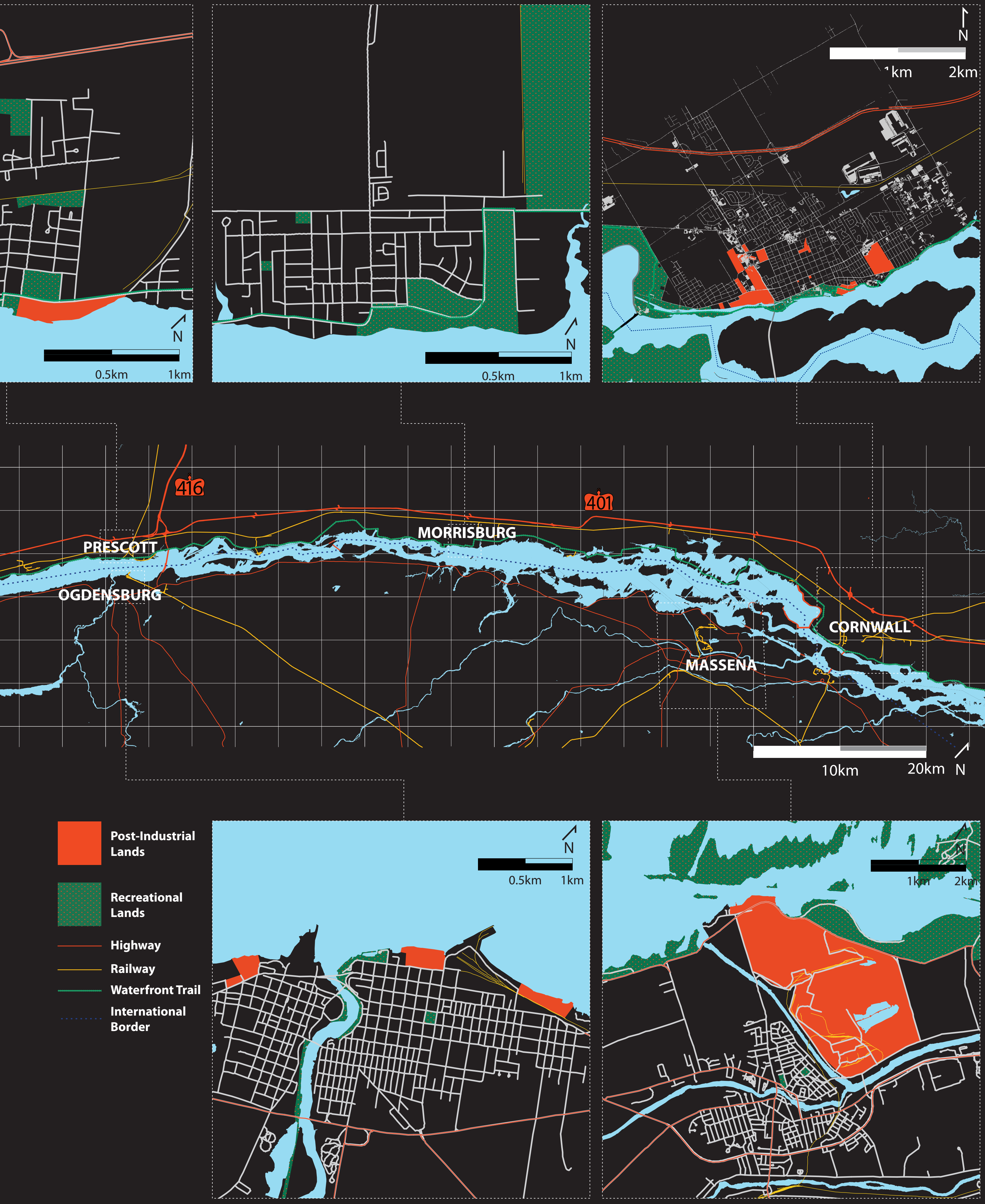
The existing Waterfront Trail is a 1400km recreational path that extends from Detroit to the Quebec-border following the shoreline of the Great Lakes and the St. Lawrence River. The Waterfront Trail connects 68 communities and over 400 parks. It is a local and tourist recreational path. The Waterfront Trail between Toronto and Montreal for cyclists is emerging as a great Canadian journey.

The 1000 Island region that is located between Brockville and Gananoque is a tourist paradise. The design proposal intends to expand and extend this tourism and leisure focus along the extent of the XXL site through orchestrated engagement with the Waterfront Trail. A place of pedestrian travel, it connects recreation to the waterfront. As a piece of local recreational program, the Waterfront Trail furnishes a beautiful setting for leisure activities. Specific points of the trail are ideal locations for local citizen intervention, to improve the local setting. Combined with the tourism potential of the trail, it has the potential to bring new people and new ideas to the community.



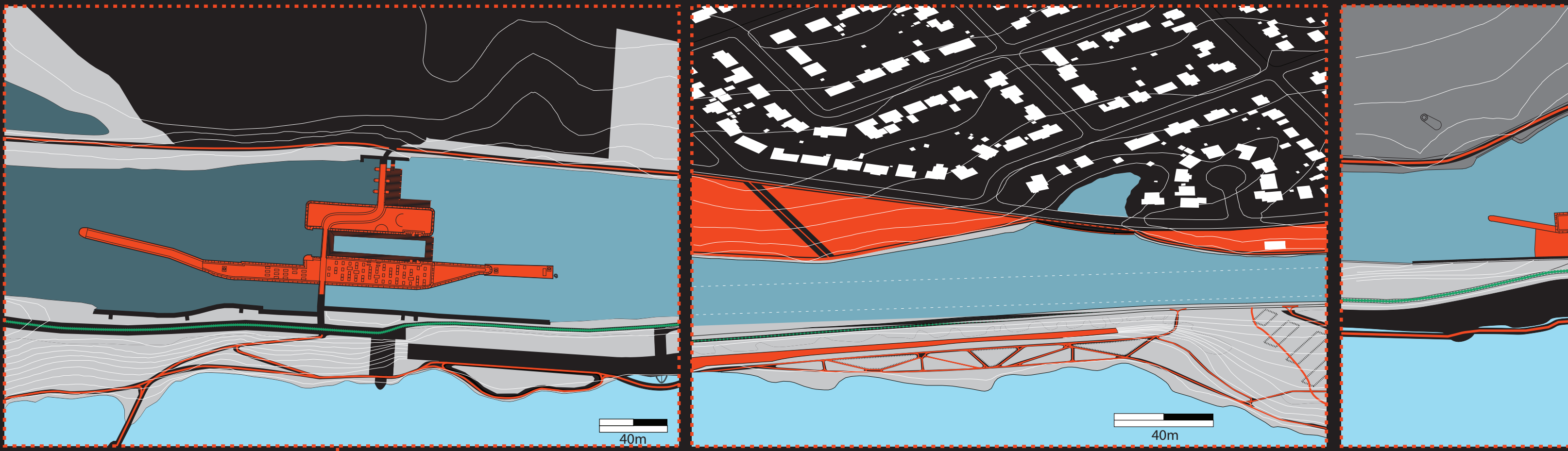

401
416
VIA
CN
CORNWALL
MASSENA
MORRISBURG
PRESCOTT
OGDENSBURG
BROCKVILLE
QUE
10km
20km
N


N
.75km
1.5km
N
1.25km
2.5km
KINGSTON
401
GANANOQUE
VIA
CN
BROCKVILLE


N
0.5km
1km
N
0.5km
1km
N
1km
2km
416
401
PRESCOTT
MORRISBURG
OGDENSBURG
CORNWALL
MASSENA
10km
20km
N
Post-Industrial Lands
Recreational Lands
Highway
Railway
Waterfront Trail
International Border
N
0.5km
1km
N
1km
2km

6

Conclusions, Results & Future Directions



□ Public Lands

■ Brownfields

M

Orchestrated Seasonal Rituals

CityLab Program for Public Agency

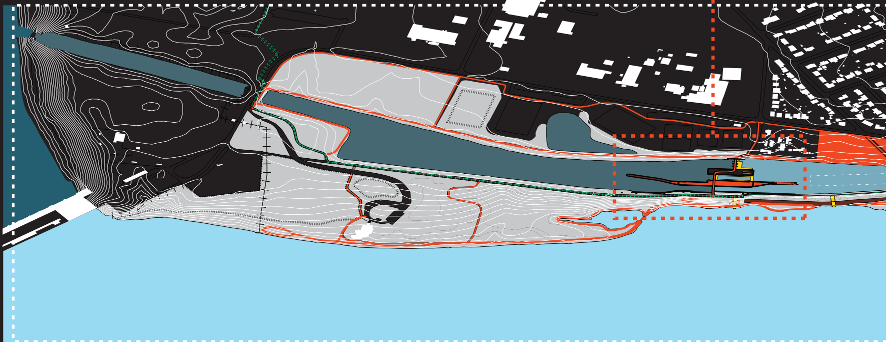
Activivating Hubs with Catalyst Interventions

Formalization of New Routes

Macro Habitat Planting Strategy

Brownfield Regeneration

Experiments with Identity and Memory



XL

Establishment of Seaway Landscape Park

Integrating Existing Landscape Features

Celebrating History and Identity

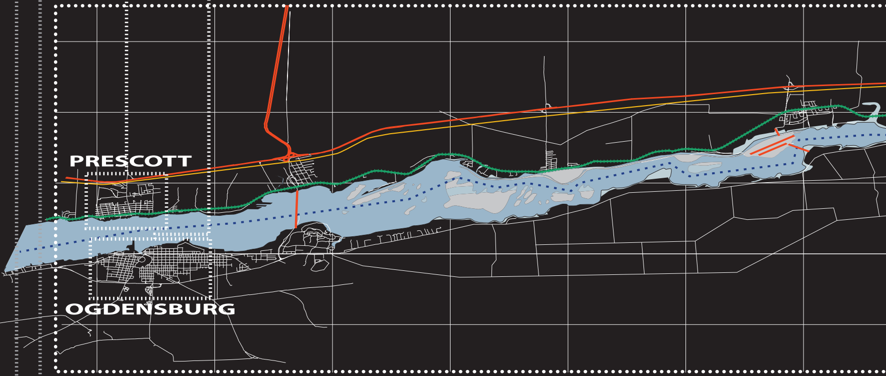
Integrating Contingency

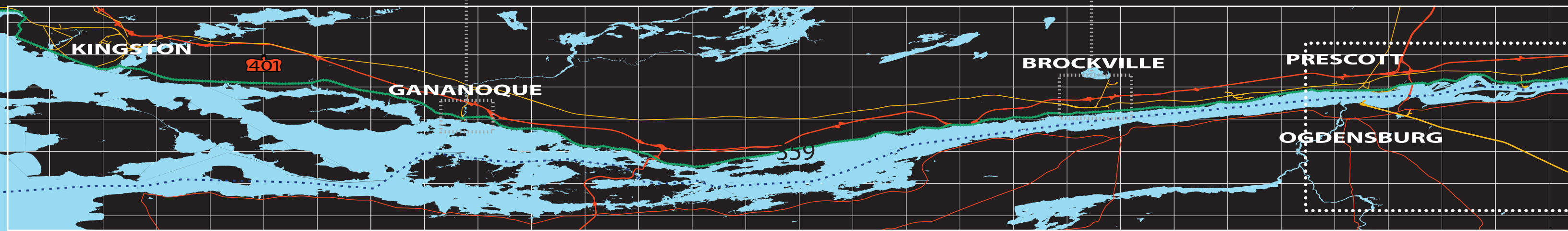
Infrastructure as Network Structure

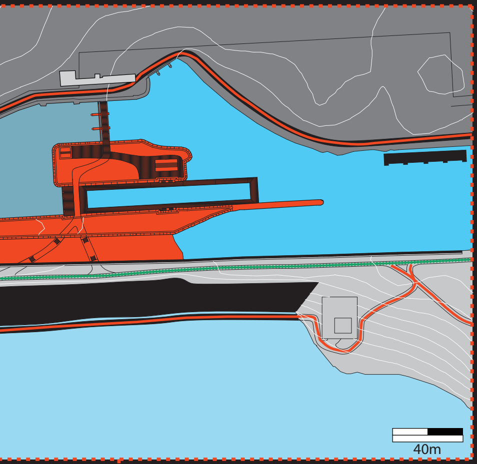
Waterfront Recreational Trail Improvements

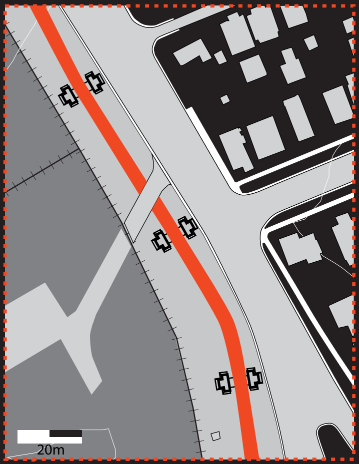
Leveraging Existing Natural Processes

Remembering the Seaway Dream



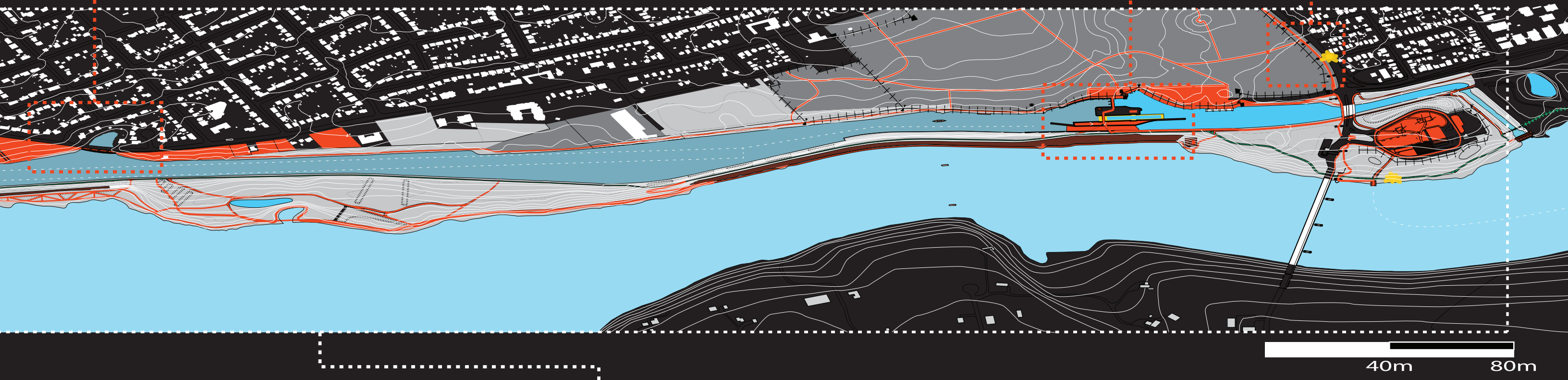






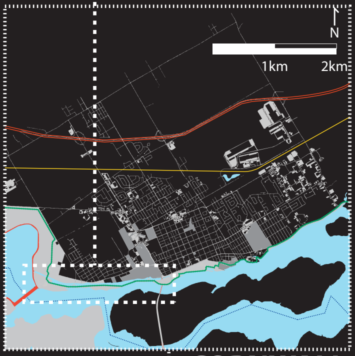
S

- Orchestrated Public Events
- Guided Exploratory Themed Walks
- Activation of Interstitial Spaces
- Creating New Paths and Rest Moments
- Removing Perimeters
- Tactical Urbanism Interventions
- Occupying Voids
- Regenerative Public Planting Strategies
- Habitat Public Planing Strategies



ORRISBURG

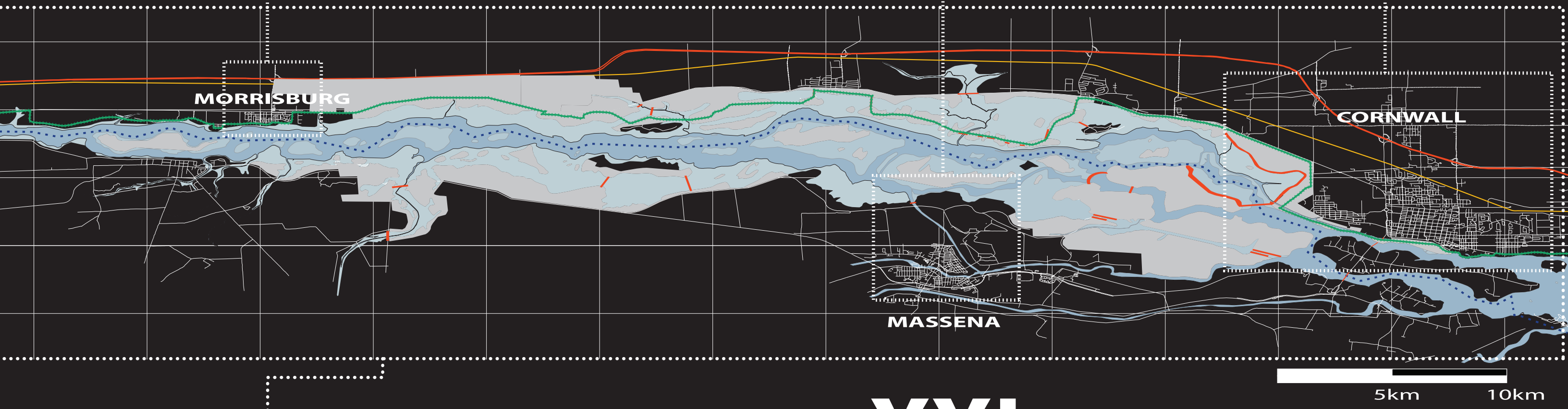
MASSENA

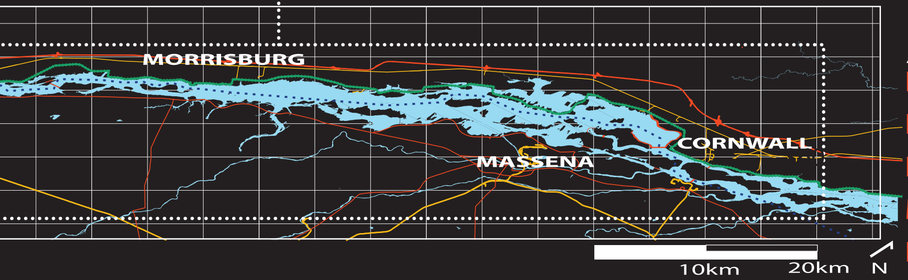


CORNWALL

L

- Optimization of Public Waterfront
- Reclamation of Waterfront Community Identity
- Imrpvoing Access to Public Land
- Brownfield Regeneration
- City Specific Program as Required
- Improving Intercommunity Connections
- Allowing for Unique Randomness





XXL

- Designing a New Regional Theme
- Establishing Local Design Generators
- Regional Discussions on Ecology
- Managing Regional Identity in the Civic Landscape
- Preparing for Further Regional Flux

Chapter 5: Conclusions, Results and Future Directions

The creation of the St. Lawrence Seaway and the subsequent global economic shifts that followed have produced a broad and complex landscape. Engagement with this landscape required multiple lenses at appropriate scales to reveal existing conditions. Each scale required a unique set of methods to maximize the effectiveness of the engagement. A strategy of tactical interventions intended to spur interpersonal contact and bolster fledgling agency is appropriate at the S scale, but would be unable to function at the XL scale. The engagement with the XL scale requires a unique set of operations that would not be effective at the S scale. The scale of the lens itself is an indicator that defines the appropriate method of intervention.

My intent following this thesis project is to return to the site and attempt to engage with the local community. It is my belief that the development of agency must be carried out 1:1, in actual practice. I therefore believe, in this setting, that the most important critical engagement occurs at the S scale. This is the scale that depends on interpersonal interactions, this is where community is formed. The S scale has the greatest ability to influence and impact the civic landscape. The specific macro top-down design strategies of the M-XXL scale are of critical strategical importance, but it truly is the interaction of individual community members on the S scale that create the city.

Examples of grassroots initiatives from large international urban centres, while on a whole other level of scales that are external to those contained within the site of this thesis, offer a road map of what to strive for. Strategies and tactics focused on community building that have been deployed elsewhere, regardless of site nor specific conidtion, are a starting block to embolden the muted citizen agency in Cornwall. It is imperative to understand the role of design in community building in this context. Cornwall is the product of a geographical condition overtaken by enormous circumstance best understood on the XXL or XL scale, but the challenge to the city today is best addressed on the S scale. Here the public engagement with methods focused on building community identity and spurring human agency holds the promise of maximized results in the life of the individual. The regional design approach that connects all of the communities along the St. Lawrence Seaway is significant, but to even approach feasibility it first requires the development of a culture of one on one public engagement at the S scale. Without the development of this public agency, even the most robust of region design proposals will be hindered. Here begins my work.

The work of my practice will not be bound by the expectations and roles of the productivist system, but will seek to agument these existing systems wherever possible. The future of

Cornwall is still uncertain. The city has transitioned from an industrial factory town, to a logistics hub. In 1904,Tony Garnier imagined what the ideal 'Cité Industrielle' would look like. Today the new service industry of logistics, with the construction of massive warehouses and the dependence on highway infrastructure, requires a similar undertaking. In Cornwall, any post-Seaway design proposal will have to address the establishment of human agency. Again, it is the fostering and development of interpersonal connections at the one to one scale that the civic landscape begins to manifest itself as the public community. Not only does this scale best reflect the gravitas of public life, but it is the most accessible and relatable to the civic landscape. Much has changed since the time of the Seaway Project, and that time has passed. Moving forward, we have the momentous opportunity to illustrate as a community that not only have we changed, but we have gained new knowledge and understanding from that past experience.

In my personal engagement I wish to gain a better understanding of the native experience in regards to the SLS&PP. The outcomes of the Seaway Project had a more drastic impact on the Mohawk communities of Akwesasne and St. Regis as a result of their unique culture. Their cultural views and experience towards absolute authority and the civic landscape offers much to contribute to this new period of time we are entering into along the St. Lawrence River. First and foremost among them is resilience, an act that begins with resistance, and ends with the ability to overcome. In addition to the Mohawk nation, I would like to see my proposed approach expanded to the southern shore of the St. Lawrence River, to the US side of the border. The issues and challenges faced in Upstate New York are very different from those on the Ontario side, but they offer new methods that will strengthen and better inform the overall macro strategy of engaging and improving human agency in this landscape. A further expansion of this work, both in regards to research and tactful 1:1 site engagements would be to spread it along the full extent of the St. Lawrence Seaway System by including the St. Lawrence River lowlands that extend from Cornwall to the Gulf of the St. Lawrence. This section of the river lays almost entirely within Province of Quebec and like the other three nations, the unique cultural attitudes and values of Francophone Canada, in relationship to the civic landscape, would contribute greatly to a strategy focused on building human agency in this region. The initial attempts at creating one-on-one interpersonal moments intended to build agency will have varying success and will be a process. The record and documentation of this process will serve to improve future interventions, whether on the same site or elsewhere. The ultimate goal is to create a manual for any town or city that is interested in engaging the local community through experimentation with the physical city. First, this grand design begins with a moment of person-to-person interaction along the waterfront in Cornwall.

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